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News



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CYLINDERS

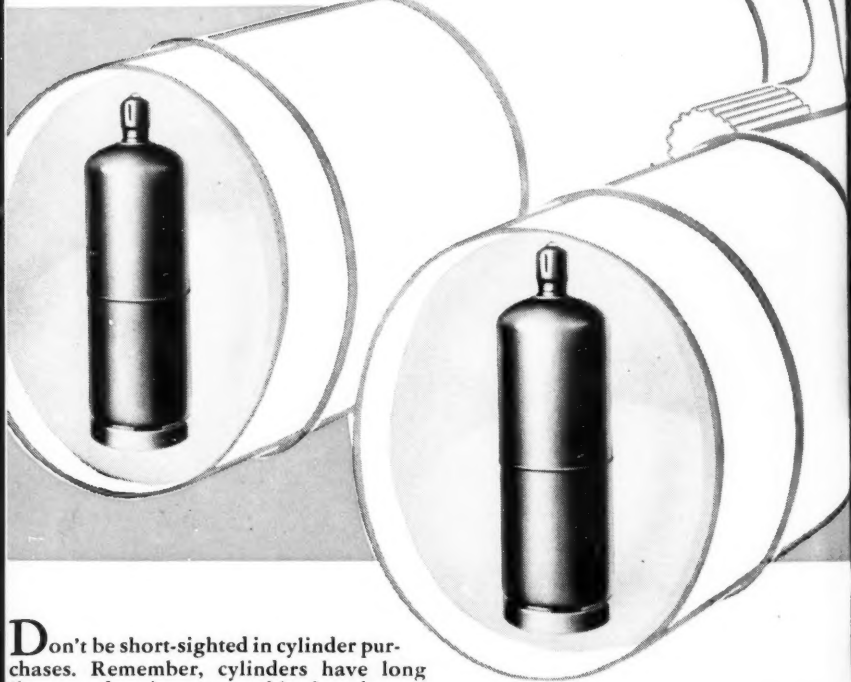
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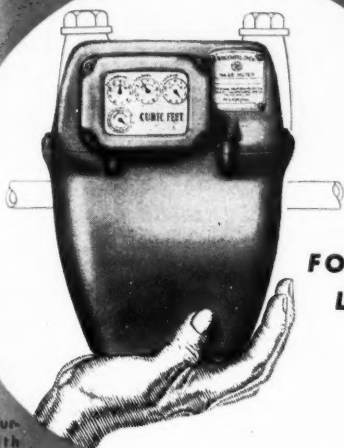
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BUTANE-PROPANE *News*

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LETTERS

OUR READERS are invited to submit to our technical editor any installation, service, or operational problems which they cannot solve for themselves. There is no charge for this service. More than 600 letters asking for different kinds of information were received last year.—Editor.

Gentlemen:

Several of my customers here in Florida are complaining about condensation on their windows from gas heat. It is bad enough to cause the water to run down onto the window sill. Would you please advise me how to remedy this condition?

T.H.S.

Florida

Natural gas and liquefied petroleum gas burn when combined with the oxygen in the air to carbon dioxide and water vapor.

Unvented appliances will eventually raise the humidity in the room to the point that condensation will form on the cool surfaces.

This can be entirely prevented by using vented heaters where the products of combustion are carried off through the vent to the outside of the house.—Ed.

Gentlemen:

What causes the flame in a heater to surge up high to a height of 4 inches, then in about 30 minutes be back to normal? Never can tell when it will do it. Is the regulator at fault?

A.E.

Kansas

The change in flame height is due to an abnormal change in house line pressure. You should change the regulator and if this does not cure the trouble, check the installation for a possibility of liquid getting into the line.—Ed.

Gentlemen:

We are a small propane dealer with approximately 125 accounts; we "backed in" to the business during the war-time shortage period, since we had no alternative to service our customers. We secure our gas and cylinders from a well-established supplier, and have attempted to make satisfactory installations in all instances.

We find, however, that many of our installations do not conform to regulations as to placement of cylinders, even though we followed "official" advice. We were told to make clearances only in respect to underground openings, and now we are being inspected upon the basis of any opening into house below tank valve. We are also requested to report as to whether appliances are approved for LP-Gas when actually, except for 100% shut-off on water heaters, very few of our appliances carry approval.

We find ourselves in the position that either we must continue to expand our propane business or give it up. We are concerned with two problems about which we seek your advice since we have not secured satisfactory information to date.

The first is that we have no liability insurance to cover our propane business, and have not found any insurance protection available to us commensurate with the size of our operation. We have been advised that we do and do not need insurance. It is our better judgment that we should have some insurance protection, and

that since it does not seem obtainable we should discontinue our gas operation.

Our second problem is that our gas market would be very greatly limited if we are to service only AGA or Underwriter's approved appliances and equipment in the strictest sense, since that would necessitate a much greater investment by the customer.

J.B.R.

Colorado

It is apparent from your letter that you are very conscientious in wanting to make installations that conform to legal requirements. Of course, you are aware that Colorado has its own LP-Gas law and that you must conform to it in all respects. I do not know what it says regarding AGA and Underwriter's approval of appliances and equipment but I do know that it certainly is good practice to serve approved equipment in all cases.

Of course, many natural gas ranges have been converted to liquefied petroleum gas and the custom is widespread. I do not think that involves any hazard if it is done correctly but the customer cannot possibly expect as good service as on one designed for liquefied petroleum gas.

A 100% automatic shut-off on water heaters is definitely a "must," whether or not it is required by your law.

I would suggest that you consult some of the other dealers in Colorado to determine what they are doing in regards to problems similar to your own and also that you write to the state inspector of oil.

Are you a member of the Colorado Liquefied Petroleum Gas Association?

By all means you should have insurance. I am sending you names of firms who specialize in LP-Gas insurance.—Ed.

Gentlemen:

We would like comparative fuel costs on 30 to 50 hp. gas-fired boilers using oil, in comparison to propane, efficiency ratings on the different fuels, and best type of burner for vertical or horizontal types of boiler, when converting to LP-Gas.

L.L.Y.

California

There are many good boilers in the 30 to 50 hp. range and most all of them can

be supplied with either oil or gas burners or combination burners. In a boiler of this size, the efficiency on gas and oil are about the same. The fuel consumption in gallons will be proportionate to the heat value of the fuel.

Number 5 fuel oil contains about 146,000 Btu's per gallon. LP-Gas will contain from 93,000 to 100,000 Btu's per gallon, depending upon the blend. Roughly, about $1\frac{1}{2}$ times as many gallons of LP-Gas would be required over No. 5 oil.—Ed.

Gentlemen:

I am in the LP-Gas business in Springfield, Mo., and have been in the LP-Gas business for the past 11 years for some of the independent companies of Missouri, Utah and Idaho.

I supply a territory in and around Springfield, Mo., with bottle and above-ground tanks. I have everything from ranges to unit heaters and all sizes of gas systems for the home and business. The 250-gal. and 375-gal. systems for cooking, hot water, and small jobs, and the larger tanks for heating. This kind of operation assures the customer a steady supply of fuel.

But we are interrupted in our business by contractors in the building business, and some other people in business that can get this gas equipment at wholesale, from the distributor of certain appliances such as floor furnaces and water heaters, along with the tanks for home use.

Of course, I have no control over where they buy or what people buy, but I do think this can and should be straightened out. These contractors buy small systems and expect the independent operators, with their own gas load, to take care of the people who buy their houses.

As I don't take care of any tanks installed, other than my own installations, I have not much to say about this competition.

But these people, and there are many, are tearing down most of the

rules and regulations we have built up in the past.

I think that there should be some laws or rules made pertaining to this kind of business, and only LP-Gas dealers who can supply the gas, and also have good service men, sell and install all LP-Gas appliances.

What do some of you other LP-Gas men think about this kind of operation?

R. N. Dyson, Mgr.
Quinn Sales Co.

Springfield, Missouri

I do not suppose there is any legal relief for you in a matter of this kind, but certainly the high standards of the liquefied petroleum gas industry should help to eliminate such kinds of competition.—Ed.

Gentlemen:

We have recently installed a 21,000-gal. water-capacity propane gas storage tank and we are having a little trouble finding out the proper thermometer to buy to go with this storage tank. This tank has a ¾-inch iron pipe in it to accommodate a thermometer and we believe that this pipe goes to the bottom of the tank, which is 96 inches in diameter. This pipe is directly in the center of the top of the tank and right adjacent to the slip tube.

We would sincerely appreciate learning the proper type of thermometer to buy for this tank and for use in taking the temperature on tank cars and the proper firm or firms from whom to make this purchase. We have written to three firms now and each one refers us on to some other firm.

Does it seem to be the best practice to fill this ¾-inch iron pipe with some liquid such as kerosene?

O.S.

Oregon

The thermometer you require is a 12" or 10" long laboratory thermometer, range 0° F. to 120° F., with a metal protective case to prevent breakage. These can be obtained from

Taylor Instrument Co., 605 West Olympic Boulevard, Los Angeles.

It is not necessary to fill the tube with liquid as sufficiently close readings can be taken with still air in the pipe.

Kerosene or other oil is messy to use. Tie the thermometer case to a light chain and attach the other end of the chain to a pipe cap which will prevent dropping the chain down the pipe.—Ed.

Gentlemen:

We have just recently completed the conversion of our city gas plant to propane air-mix and find that we have no further use for our gas holders. We have a small 10,000 cubic foot holder which has a brick and cement base about 7 feet tall. We are very anxious to dispose of the steel holder itself and will have to lift or take it out some way.

Undoubtedly there is still a small amount of city gas in this holder and we are writing to see if you can give us any suggestions as to the proper method and the safest way to get this steel holder out of the base.

H.E.G.

Massachusetts

We would suggest contracting the demolition of the holder to one of the companies which builds and repairs holders.

The holder should be purged before working on it. I think you can obtain from the American Gas Association, 420 Lexington Ave., New York City, a folder on safe methods of purging.—Ed.

Gentlemen:

Please send information regarding use of propane gas for cutting, welding and brazing.

W.L.G.

Georgia

Propane can be used for brazing and welding low melting point metals, but is not satisfactory for welding steel.

It makes an excellent fuel for cutting steel and is used in conjunction with oxygen.—Ed.

• **BUTANE-PROPANE** News welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

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are easy...*



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an improved
type of venturi
atmospheric
gas injector.

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ONLY A SCREW DRIVER
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These are other Lojector features:

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INDUSTRIAL DIVISION
COMBUSTION FOR INDUSTRY
Bryant Heater Company

COMMENT

ACCORDING to a recent release by E. E. Hadlick, executive vice president of the National Butane-Propane Association, that organization is undertaking the compilation of laws and regulations relating to the distribution of butane-propane gases for every state in the Union which has passed legislation governing our industry.

One by one, the laws and regulations of each state will be mimeographed and sent out to regulatory officials, to secretaries of state associations, and to other interested individuals, so that a complete, up-to-date file upon state laws will soon be available for all those directly concerned.

These will not be resumes of the regulations but the entire laws in every instance.

The January issue of "House and Gardens," national publication, carried an interesting and attractive spread entitled "Bottled Gas—All the Conveniences of City Living in a Country House."

The article was creditably written and included good diagrams showing rural uses of the fuel and safety precautions.

The butane-propane industry is beginning to get some beneficial national publicity.

During 1947 the gas utility and liquefied petroleum gas distribution systems added more than one million homes to their lists, according to John A. Robertshaw, president of the

Gas Appliance Manufacturers Association, in a recent announcement. This brings the total number of homes served by the gas industry up to 24 million.

During 1947, according to figures from the same group, about 26% of all gas ranges manufactured, 21% of all automatic gas water heaters, and 24% of all gas floor furnaces were for use with liquefied petroleum gas.

Findings of the National Safety Council show that fire losses in the United States in 1946 showed gas to be 20th on the list of 25 given causes. In that year, there were 5000 fires caused by gas and appliances, with a total loss of \$4,400,000, as compared with a total of 608,000 fires which caused a total loss of \$580,000,000 due to other causes. Electrical, fixed services, fires due to misuse or faulty wiring or equipment were responsible for \$52,000,000 of loss.

It certainly looks like gas was the fuel to use.

However, if you want to know the conditions most frequently reported as contributing to accidents involving gas, you can get them from the Metropolitan Life Insurance Co., which lists them as follows: Burning gas with an excessively high flame in poorly ventilated rooms; extinguishment of flame by liquid boiling over or by gusts of wind; defective flues; leaking pipes; jets turned on by children, and jets which are not completely closed.

The National Safety Council states that: "Potential hazards are practi-

cally eliminated if an appliance is an approved one and is properly installed and adjusted; if it is properly used; if it has a flue connection when necessary; if the room in which it is used has an adequate air supply, and if necessary repairs are made promptly by qualified repairmen. It is very important that the appliances be properly installed."

The Liquefied Petroleum Gas Association has done creditable work in preparing a model law to aid state legislatures in formulating regulations covering the liquefied petroleum gas industry. This has been in use for some time.

More recently, that association has completed a model city ordinance which will now serve a similar purpose in towns throughout the country.

Now under preparation is a "good practice appliance manual." This will cover good practices in the installation of all LP-Gas appliances.

Also, the LPGA has recommended to the Underwriters Laboratories a July 1 deadline date for the Underwriters to establish "on the use of equipment and listed systems for the design and construction standards that have been changed in the NBFU Pamphlet No. 58 revision of January, 1947."

The action was taken by the board of directors in its December New Orleans meeting and was the result of a canvass made by Technical Vice President Frank Fetherston of the Equipment Manufacturers Section of the association.

Reports state that, based on actual tests, tire pressures on trucks should not be lowered for driving on icy roads but that the manufacturers recommendation should be followed.

Even Russia knows what butane and propane can mean to its economic life.

An American construction company is building a liquid methane plant in Russia which will have storage for liquefied petroleum gas for standby and peak load purposes.

Meetings of state associations are occurring frequently and regularly. The industry is giving more earnest thought to the problems that confront it and turning to group action to attain needed reforms—or to oppose the too stringent reforms that some legislatures are unthinkingly writing into law.

The Kentucky Liquefied Petroleum Gas Association issues a monthly bulletin to its members. The December issue carried a message which is well worth reprinting and might even be adopted as a national policy for industry members. Here it is:

"Short supply of gas, cylinders, or other equipment should not be discouraging to you. You are in on the ground floor of a business that will grow more rapidly than most any other merchandising or service line within the next few years. Build solidly.

"Accept only the business you can serve adequately and well. Don't spread out too thin. Don't buy business. Sell your wares. Know your costs. Keep your operation efficient and provide for a reasonable profit, to which you are entitled. Don't let nit-wit competition stampede you. Answer price competition with superior service.

"These are a few tips that you can play and be on hand with banners flying at the pay-off window when 'quick money' boys have folded."

By Ed.

LP-Gas Expands in Texas

How One Company Serves 11,000 Customers

A STOUT selling point in the sales program of many a prosperous LP-Gas marketing operation

has been the wholehearted acknowledgment of the need for assuring consumers of an ample supply of fuel throughout the year. Active pursuit of a larger consumer storage policy has served as an answer to satisfying year-



FEILD FOSTER

round demand in 14 counties of Texas for the Stargas Department of the Lone Star Gas Co., a natural gas utility headquartered in Dallas.

Under the direction of Feild Foster, supervisor of the department, Stargas has not only dedicated itself to placing at least 500 gals. of storage on consumer premises. The department is also operating under a specially devised plan calculated to make the most of the domestic storage outposted throughout its system.

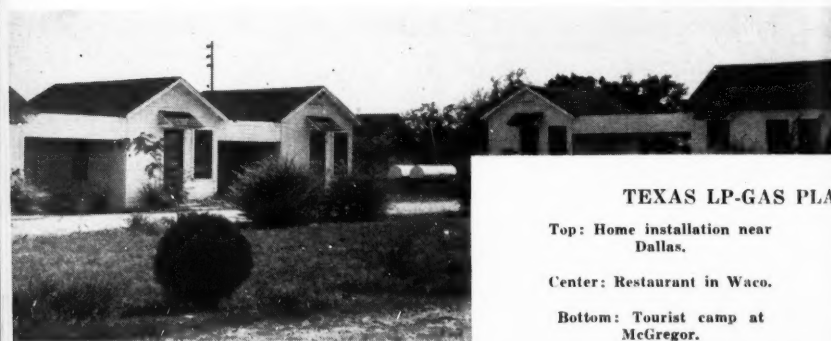
Increased consumer storage and the intelligent use of it enables

By BOB SMITH

Stargas to welcome more than 3500 new customers during 1947, bringing the total number serviced by the department to 11,088 at the end of October. Several new units were added to the department's equipment to handle the new load, but a combination of two transportation-saving delivery systems is credited with meeting the year's winter peak demand.

In the first place, Stargas delivery trucks do not follow regular routes. The number of deliveries to consumer tanks is based upon a postcard notification plan. The company sends return cards to its consumers, who in turn indicate the float gage readings on their tanks in a space provided for that purpose. When the postcards are returned to the offices of the department, a schedule of deliveries is made up. Only tanks which are reported to be down to a 10-day supply are serviced, insuring that trucks will make substantial refills whenever they visit consumer installations.

To carry customers over the fuel-starved winter months, Stargas de-



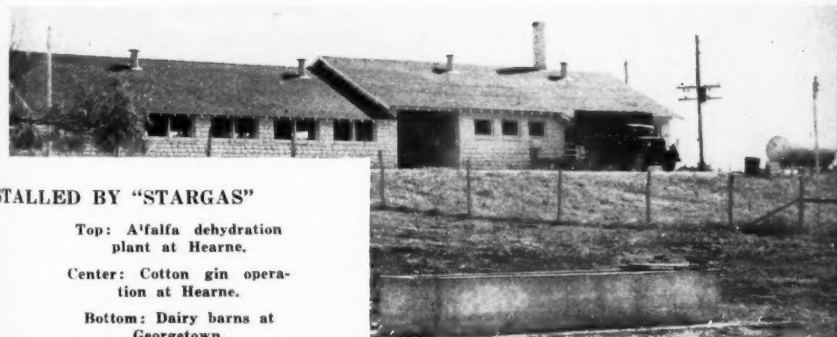
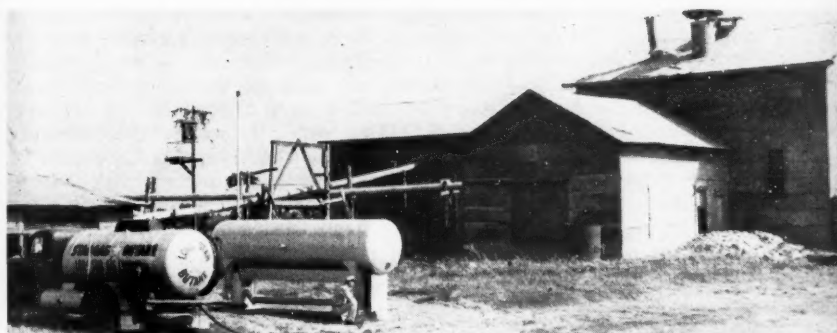
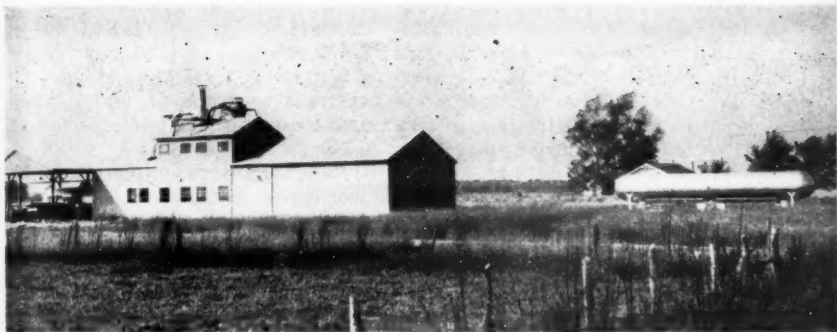
TEXAS LP-GAS PLANTS

Top: Home installation near Dallas.

Center: Restaurant in Waco.

Bottom: Tourist camp at McGregor.

BUTANE-PROPANE News



ANT STALLED BY "STARGAS"

Top: Alfalfa dehydration
plant at Hearne.

Center: Cotton gin operation
at Hearne.

Bottom: Dairy barns at
Georgetown.

parts from the plan outlined above wherever deliveries will enable installations to pass peak periods with sufficient fuel. As a general rule, the department attempts to keep tanks approximately at the following levels during the Texas winter:

Month	Fuel Reading
December 1	100% full
January 1	90% full
February 1	50% full
March 1	25% full
April 1	10% full

In this manner, the tanks are filled to capacity at the beginning of the cold months with a fuel supply that will carry most consumers until spring. Large consumer storage, then, is the heart of the Stargas method.

To augment its 500-gal. consumer tank policy, the department maintains nearly 1,500,000 gals. of bulk storage in 54 tanks, increased during the past year by the installation of 31 new 30,000-gal. tanks. Because Stargas is certain of an ample supply of butane—the LP-Gas used throughout its system—from wells owned and operated by parent company Lone Star, it is at an advantage from the outset. Its policy of installing consumer storage of not less than 30-day peak demand, however, is its insurance against over-taxation of transportation during the winter.

The department added 25 new delivery trucks to its fleet during the past year, bringing the total to 62 units. Three new tank transports have also increased the number of these rigs to eight, ranging from 3400 to 4500 gals. carrying

capacity. According to Supervisor Foster, this transportation moved 5,155,014 gals. of butane during the first 10 months of 1947, a 64% increase over the amount of fuel transported in the same period of 1946.

The total number of gallons delivered to customer tanks was 5,412,695 for the first 10 months of 1947. This figure is larger than the number of gallons transported for that period because 257,681 gals. went into district bulk storage tanks.

To encourage the installation of large consumer storage that makes huge delivery volume possible, Stargas leases its tanks to consumers at a liberal \$15 labor charge. The tanks are considered portable, and when the natural gas pipe lines of the Lone Star Gas Co. reach the fringe areas served with butane the tanks are moved to new sites. This method of operation helps the gas utility hold the load against electrical competition beyond the mains.

From new users who already own tanks and systems, the department requires a security deposit on the butane initially placed in the tank. Thereafter, the customer is billed according to his float gage reading at the time his tank is filled.

In connection with the billing method used by Stargas, it should be mentioned that the tanks are filled at the discretion of the company. The consumer is merely charged for the amount of fuel used since the last visit of the delivery truck.

Although butane is the chosen fuel of the Stargas department at

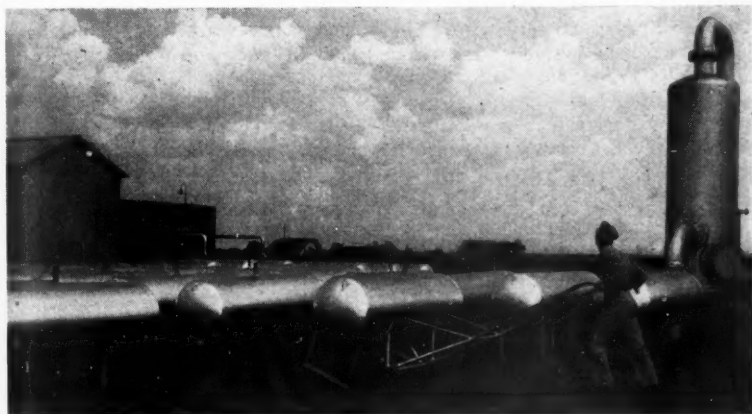
the present time, the trend toward propane has been recognized by Mr. Foster. To avoid the possibility of propane being put into butane tanks by unwary truck drivers, the organization's installations have remained exclusively on the lower pressure fuel. Future plans, however, call for the conversion of some districts in the Stargas system to propane.

From beginnings as an experimental operation at the Gordon gasoline plant of the Lone Star Co. in 1929, Stargas service has certainly "grown up overnight." The first sales were for cooking purposes with what was termed "bottled gas" deliveries in 90-lb., portable, steel cylinders which, when empty, were returned to Gordon for refilling. In 1934, the company began developing bulk delivery service to large tanks permanently in-

stalled at the customers' homes. Until the beginning of last year this storage was primarily of the 285-gal. variety.

Even with the addition of 500-gal. storage to many domestic installations, during the first 10 months of 1947 delivery trucks in all Stargas areas drove a total of 393,833 miles, making 43,223 butane deliveries into customer tanks. Deliveries varied from about 1000 gals. into commercial customer tanks to 100 gals. into the smaller domestic tanks. Of the 5,155,014 gals. handled, approximately 15% was shipped in railroad tank cars and approximately 85% in large butane transport trucks and semi-trailer rigs. The latter drove about 240,000 miles during that period.

Personnel handling Stargas operations has increased to a certain extent with the large increase in



A stock of consumer systems at the Lone Star Waco assembly plant.



3600 gal. LP-Gas transport.

customer demand and facilities to meet the growth. In addition to office personnel, including Mr. Foster as supervisor, Joe Wallace, chief clerk, whose duties include the dispatching of butane to distributing points, and Miss Anna McGuyer, office stenographer, the force includes Deck Hulcy, Jr., Stargas engineer, and Dan Yarberry, Stargas field supervisor. The latter men have actively supervised the design, purchase and installation of the new butane storage units added to the system during the past several years and are available for engineering problems of the industrial customers.

There are 10 transport drivers working out of the Dallas office who drive in all kinds of weather during the winter months to keep the transports moving from plants to bulk storage locations. These men are Charles Brunton, Jr., Robert B. Rimmer, Dewey Elam, Geo. Reynolds, Ernest E. Remmer, A. E. Gallip, John M. Callaway, Audie

A. Riggs, Robert Brannin, and J. U. Day, Jr.

Supply sources for the 54 bulk storage tanks are Lone Star gasoline plants at Ranger, Trinidad and Opelika. The transport trucks make weekly runs of six or more round trips from these plants to storage tanks in the distribution areas.

In addition, company owned railroad tank cars are continually working back and forth from plant to district storage. Approximately 21 storage plants have railroad spurs, but even their requirements are, at times, augmented by transport truck shipments. Truck transportation is also advantageous for quick three or six hour service from the plant to storage tank, since railroad tank car shipments require two to five days.

The department's transport and delivery trucks are powered by butane. Dual motor fuel utilization is provided, however, with gasoline tanks for standby or emergency use.

Stargas hires only experienced transport truck drivers to operate its king-size equipment, but they are carefully instructed on the characteristics of LP-Gas. The organization is also now conducting a "defensive driving" campaign in hopes of maintaining its record of never having a serious accident. In defensive driving, operators are responsible for handling their vehicles on the defensive, as if the drivers they encounter on highways lack skill and knowledge of safe practice.

By being prepared to correct the mistakes of others, it is felt that the department's drivers will observe the safe rules and regulations of overland transport. Mr. Foster, with the aid of A. W. Breeland, safety supervisor of Lone Star, is giving short talks to Stargas transport operators on defensive driving. The essence of the program is this:

A defensive driver is one who makes allowances for the fact that he has no control over the unpredictable actions of other drivers and pedestrians. He develops a defense against these hazards: he concedes the right of way and makes other concessions to avoid collisions. The defensive driver thinks ahead about what might happen and is ready for any emergency. He anticipates trouble by thinking for the other fellow.

The defensive driver never places complete faith in the other fellow's hand signals. He is always prepared for the motorist who ignores stop signs. He gives adequate and timely signals and has the necessary skill to provide the added margin of safety in emergencies.

A successful blending of adequate equipment and intelligent operational principles, then, is the Stargas formula for bringing prompt and satisfying service to more than 11,000 customers.



Delivery truck at 16,000 gal. storage plant at Fort Worth.

Standby Facilities Permit Utility To Serve Fringe Areas With LP-Gas

By ED TITUS

A VERY COMPLETE LP-Gas plant, primarily for peak shaving, which will supply 12,000,000 cu. ft. of 530 Btu gas over 3 days, or about 10,000,000 feet of 700 Btu, has recently been completed for Springfield (Mass.) Gas Light Co., and is ready for operation to meet peak demands this winter.

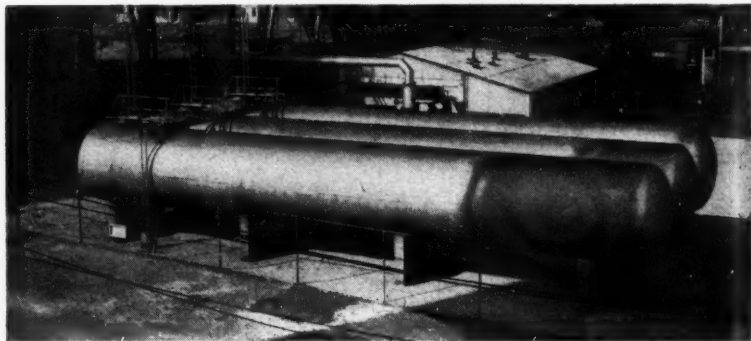
The plant is of the blower type with volumetric ratio mixing valves. The Springfield plant will enable the utility to get into the bottled gas business, serving off-main customers with 100-pound and other size cylinders. Included in the set-up is a 4-spot bottling plant.

The installation was by Luke L.

Nakashian, a Boston engineer, who also engineered the first propane-air peak shaving plants in Boston and Brockton, Mass., and an LP-Gas enriching plant for Hartford (Conn.) Gas Co.

The plant is particularly complete in its safety equipment, it was stated by officials of the Springfield company. There are safety valves on the high pressure lines and on the storage tanks. Safety valves are placed after each reducing valve, which are generally at lower pres-

The Springfield (Mass.) Gas Light Co. LP-Gas plant. In foreground are three 25,000 gallon propane tanks. In background is building containing the diluting and bottling plant. At left is holder.



sure. There are portable and hand chemical extinguishers, automatic vapor leak detector and the following additional features:

1. A pressure switch is installed in each of the vapor, process air, instrument air and current lines, and these are actuated automatically to shut the plant down in case of failure of any of these constituents.

2. A siren sounds immediately when one of the pressure switches operates.

3. The plant cannot start due to any resurgence of the failed constituent. The operator ascertains the cause of the failure and remedies it. He must re-start the plant manually and throw it into automatic again.

The plant is 100% automatic in operation. Principally due to the safety factors, an operator need not be attending the plant during many hours of operation. He comes in and sets the Btu value and the flow and goes about his other duties, always, of course being within hearing distance of the siren.

Scuppers Installed

Great care was taken with the grading. This was so that there would be no pockets for propane to collect in case of a break. The diluting and bottling building is 1 foot above grade. There are scuppers at the floor level so that in case of a leak, entering air accelerates vaporization. The scuppers are so designed as to prevent blocking by snow.

The maximum daily sendout of the Springfield company last winter

was 13,000,000 cu. ft. of 528 Btu gas. Of this, 5,000,000 was coal gas and 8,000,000 water gas. The new LP-Gas plant has 3 25,000 gallon propane tanks. Capacity is 4,000,000 cu. ft. of 530 Btu gas per day.

Flexibility at Low Cost

The plant was planned with a view to obtaining maximum flexibility at lowest cost. The goal was to provide a wide range of accurate quality and quantity control. Features were incorporated to assure reliability, a permanent record of operation, ease of starting and minimum attention.

The unloading and storage pipe and valve systems were designed to provide for normal flow and for unusual conditions.

The usual orthodox tank car or transport truck unloading is used. There is a compressor, using heat of compression for pressurizing the liquid out of the tank into the storage tanks.

In the transport line between the unloading station and the storage tanks there were installed hydrostatic relief valves between all blocking valves.

During temperature above 0° F. propane will flow from the storage tanks to a vaporizer by its vapor-pressure. The vaporizer, of Mr. Nakashian's design, is of large diameter. This is to obtain a large surface for vapor disengagement from the liquid, thereby causing less turbulence and less moisture entrained in the vapor. By virtue of the large diameter, the velocity of vapor is low. In addition, there are knock-out baffles in the vapor flow path.

Good Merchandising Methods Win

"YOU will not last in this business six weeks," predicted a big business man of the area, when Louis Suddarth and his brothers, Kenneth and Fred, two years ago, leased what they termed a 25% location, moved in a couple of desks and two chairs and set up the Suddarth Appliance Co. in Miami, Okla.

The fledgling firm had only the Servel franchise for Miami, no experience that they had not gained in war or defense work, but a big supply of what they apologized for calling, "just plain guts."

Appliances and much of the merchandise was scarce or unavailable. The labor supply was short and their capital was limited to \$2000. Louis, however, holding 60% of the capital stock, was able to find financial back-

By O. D. HALL

ing for merchandise up to \$10,000, and with one refrigerator on the floor he began to acquire LP-Gas appliances as they eased onto the market at a snail's pace.

In their limited space at 136 North Main St., the brothers, through personal contacts and advertising, sold a few refrigerators and LP-Gas systems, and then added more appliances as they came in the market, until they now have a stock estimated at \$17,000.

As they entered farm homes to sell LP-Gas equipment and service, the brothers discovered that farmers had more money than formerly and wanted



Louis Suddarth, at left, demonstrates one of his LP-Gas ranges to a customer.

to make their homes entirely modern.

When the company encountered competition that no longer permitted a profit on home systems, the Sudarths gradually relaxed efforts to sell tanks and placed more emphasis on other phases of their business without losing any ground in gross sales results. More tanks in or on top of the ground, even when others sold them, meant more gas to be used and more appliances to be sold.

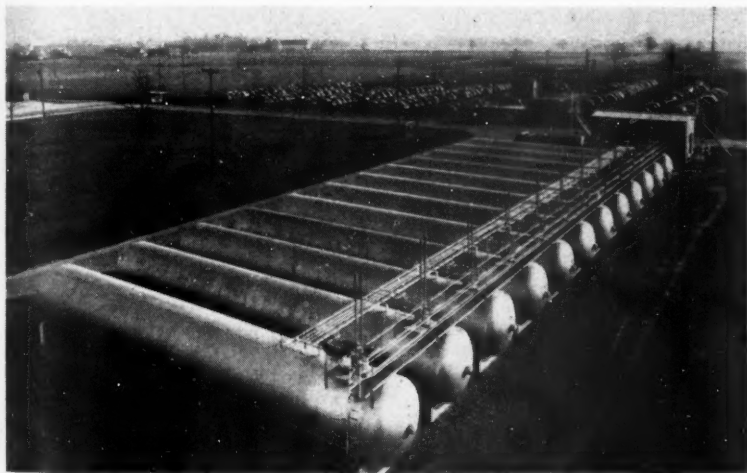
As they became available, the Sudarths added such standard LP-Gas appliances as circulating heaters, floor furnaces, ranges and water heaters.

"I try to sell the idea to my customers that anything operating at full capacity or overloaded, will wear out faster," said Louis, "so I won't install any heating equipment without

thoroughly checking the home. If I encounter heating engineering problems I cannot solve, I call in the services of professionals in that line."

The firm bears down heavily on safety in installations, such as automatic cut-offs on water heaters and other appliances. It buys no appliances or equipment until it makes sure that it is standard and only after personal inspection, if possible.

All of the brothers having been engaged during the war in military or defense service, employ no one but GI's and school them in the business under the GI training program. They take men into their organization without experience and train them on the job under this plan, which they report to be 100% satisfactory, so far as their operations go.

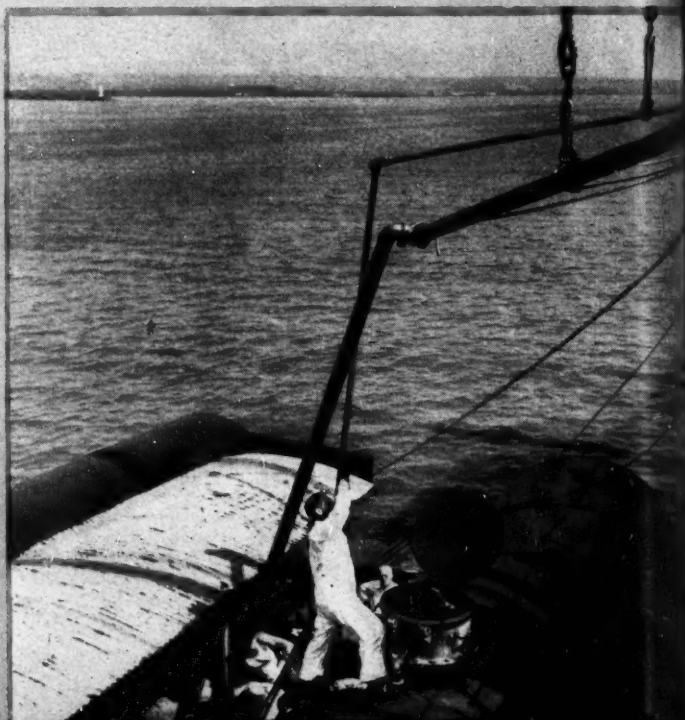


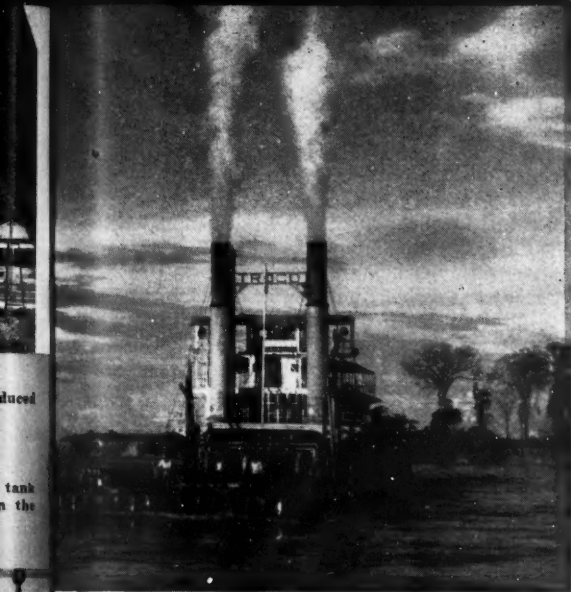
LP-Gas storage facilities at a large vitreous and porcelain enameling plant.



Part of natural gas production plant at El Centro, Columbia. At this plant propane is produced from natural gas.

Fastening flexible pipe lines through which LP-Gas is discharged simultaneously from 10 tank cars aboard railway "car floats" and the specially constructed gas-tight compartments in the Esso Sao Paulo.





Left:

Barges being pushed by river steamer on upper Magdalena river in Columbia. Barges of this type will be outfitted with pressure tanks for propane.

Below:

Railway tank cars aboard "car floats" (barges with rails), are towed to the Esso Sao Paulo, a Standard Oil Co. (N.J.) tanker especially equipped to carry LP-Gas from Aruba to Brazilian markets. Place: Deep water anchorage off Wilmington, Delaware.



LP-Gas Heads South

IN Brazil, alone, 15 cities of more than 100,000 population have neither manufactured nor natural gas service.

The area of Brazil is greater than the United States, and the country includes many other cities and rural areas where progressive-minded citizens are eager for the kind of modern kitchens they see in the movies and picture magazines.

There are a score of other neighbor republics to the South, all of which have areas ideally adapted to service by propane or butane.

The above are a few facts which



give some idea of the market potential for LP-Gases, and thus for gas appliances, in Latin America. Naturally the women want the clean gas kitchens that LP-Gas makes possible. Proprietors of small industries for which propane is ideally adapted are also learning about it. Some industries are using it now.

Standard Oil Co. (New Jersey) and its affiliates are carrying on extensive propane merchandising and distribution in Latin America. The company has established or plans to establish bulk plants in the near future in 16 cities in 9 countries in Latin America, and will establish another plant in Bermuda. The company's activities to date in this market are the result of two years of concentrated effort and the expenditure of large sums of money to establish large marine storage terminals and marine transportation.

Transportation Problem

Beginning with a market survey in 1945, Jersey Standard concluded that demand would be good in many areas, but that transportation would be the problem. They could serve areas along the coast and on rivers. The interior, however, would prove tougher to crack, due to varying quality of land transportation. Other problems were securing and transporting equipment for bulk plants and industrial installations, and securing of labor with adequate training to build and equip the plants.

But Jersey Standard decided the time was ripe. And for the Latin American marketing of propane

some new operating companies were formed. In general, ownership of these companies is shared between Jersey Standard or its affiliates, and the nationals of the country in which the operating company does business. In Colombia, for example, propane distribution is by Compania Colombiana de Gas S. A. The Companhia Nacional de Gas Esso has been set up in Brazil and the Compania Nacional de Gas Esso in Peru.

Propane Sources

At present propane for distribution in Latin America by Jersey Standard's affiliates comes from three sources:

1. Aruba, Netherlands West Indies, off the coast of Venezuela. The propane from here is a by-product of the refining of crude oil.
2. Talara, Peru, where the propane will be a product of natural gas.
3. El Centro, Colombia, where propane also is a natural gas product.

For transportation from Aruba and Talara to coastwise and navigable river bulk plants Jersey Standard expects to have a small fleet of tankers specially converted for the purpose. The first, the 16,000 ton Esso Sao Paulo, recently sailed from a U. S. Atlantic coast port for Rio de Janeiro with a cargo of 100,000 gallons of propane. It was to pick up gasoline and kerosene at Aruba. The regular run of this tanker will be from Aruba to Rio de Janeiro and Santos, two of the leading Brazilian ports.

A second tanker, which also has been converted, is known as the

Esso El Salvador, and has a capacity of 138,000 gallons of propane. This vessel will service Venezuela and Caribbean ports out of Aruba. From Talara, Peru, it will supply Lima, Peru, and Central American countries including Panama, Costa Rica, Guatemala and El Salvador.

In the conversion of the Esso El Salvador into a propane carrier, a whole new center section of the ship was built by Sun Shipbuilding and Drydock Co., Chester, Pa., while the ship was still in service. The propane tanks were built into this center section. When the time came the old central section was moved out and the new one moved in, and the whole ship welded together again.

Distribution Route

The transportation picture in Colombia is quite different from that in the other locations. The propane is picked up at a production camp at El Centro. It will be piped from there to a central storage plant at Barrancabermeja. Then it will be taken down the Magdalena River to Barranquilla and up the river to Porto Salgar and up into the mountains by rail to Bogota. Two 15,000-gallon propane capacity tanks are being placed on each broad, flat shallow-draft barge, and these will be towed or pushed along the river.

At present writing, Jersey Standard and its affiliates have set up or plan soon to set up bulk LP-Gas plants at the following Latin American locations:

Rio de Janeiro, Santos, Belo Horizonte, and Sao Paulo in Brazil; Bogota, Barrancabermeja, Porto

Salgar and Barranquilla in Colombia; Callao, Peru; Ciudad Trujillo, Dominican Republic; Kingston, Jamaica; Balboa, Panama; Caldera, Costa Rica; La Libertad, El Salvador; and San Jose and Guatemala City, in Guatemala.

Tanks for these plants and for the river transportation in Colombia are brought from the United States. But they are too large to come all in one piece. Hence they are sent in rings, and welded together on the location. Special welding crews and special inspectors are brought from the United States, to make the final product an ASME code U69 tank.

The promotion and distribution of propane is being handled by the various operating companies in accordance with local conditions. In many localities the job of propane education starts practically from scratch, although consumers are found very receptive.

At the end of the war, Brazil had a small amount of LP-Gas distribution in Rio de Janeiro and Sao Paulo and other surrounding cities. But use was not very extensive due to transport problems. There was a small distribution in Lima, Peru, and some in Cuba and Bermuda. LP-Gases are in wide use already in Argentina, where the government handles distribution of locally obtained gas.

Program Growing

The Jersey Standard propane program is going ahead just as fast as the equipment can be set up. Already one of the affiliates has six 30,000-gallon water capacity tanks

at Rio de Janeiro, and another six of the same at the port of Santos, Brazil. The number of tanks at these locations will be augmented from time to time as the load increases.

It is planned to set up secondary bulk plants inland from these coastal facilities, and the inland plants will be served by tank trucks and tank cars. Similar expansion is planned from other tidewater points in Latin America, as service fans out into the interior. In most instances the affiliates will not go into areas that already have natural or manufactured gas.

Distribution to consumers is handled in much the same way as in this country, with variations to meet local conditions. Often standard 100 pound propane cylinders are used, with two at each installation. The cylinders are delivered by trucks of the company's affiliates. When one tank becomes empty, the customer asks for another. Some consumers, however, will be on a large tank basis.

Propane Market

Domestic uses of propane in Latin America are about the same as in this country: Cooking, heating, hot water and refrigeration. Customers will not need to buy such items as regulators, cylinders and tanks. These will be supplied by the affiliate companies, the customer buying only the gas he uses.

It is obvious, however, that the expansion of LP-Gas use will open new markets for ranges, refrigerators, water heaters and other appliances. These appliances will be sold

by the affiliate companies. And if LP-Gas use becomes as widely prevalent beyond the mains in Latin America as in this country, it will undoubtedly boost appliance sales of many other distributors.

Advertising Promotion

Use of propane will be promoted through advertising in magazines, radio and other media. And the various operating companies are working out programs under which the women of Latin America will be given an opportunity to learn the best ways of using LP-Gases in their homes. For example, Mrs. Graciela Garcia de Friedrich, Director of Home Service for the Compania Colombiana de Gas, S.A., recently visited the United States. On her tour she studied the latest methods and equipment for the modern kitchen in North America, for the purpose of assisting Colombian homemakers to get the maximum benefits from their gas service.

Industrial applications in the various countries will include metal working, laboratory use, the glass industry, and some use in baking. As in this country, propane is expected to have extensive use in those industrial and commercial processes where accurate control of temperature is important.

There will be no attempt by the Jersey Standard affiliates to make the propane compete with fuel oil on a price basis in Latin America. But it is expected that there, as in this country, it will prove better adapted than fuel oil to some processes.

In some places the propane is more expensive to use than electricity, and in others it is cheaper. In some localities charges to the consumer for propane will be based on metered service. In others the gas will be sold at a flat rate by the cylinder. Metered service will be applied in some instances to the two cylinder arrangements, and sometimes also where large tanks are used.

Use of some 200 gallon tanks is foreseen. And some industrial plants are expected to require several 30,000 gallon tanks.

Illustrating the lack of gas service up to now is the fact that only five cities in Brazil—Rio de Janeiro, Recife, Nietheroy, Sao Paulo and Porto Alegre—had gas prior to the availability of LP-Gas. Among the 15 other communities of over 100,000 in the country some have had hydro-electric power. But it has not always been available at a rate to provide reasonably priced current for cooking and other home uses. And smaller communities have had neither gas nor hydro-electric power, but have depended on charcoal and wood delivered by burro, and occasionally on coal. They will get an even greater lift than the larger communities commercially, psychologically, and domestically, from the advent of propane.

C. O. Whisnand Is President Oklahoma LP-Gas Association

Officers of the Oklahoma Liquefied Petroleum Gas Association to serve through 1948 have been announced by



C. O. WHISNAND



FRED YATES

Fred L. Yates, executive secretary, as follows:

C. O. Whisnand, Butane Sales, Inc., Lawton, president, succeeding Francis Borelli, of Okarche; J. O. Green, Oklahoma Liquefied Gas Co., Seminole, first vice president, and Grover Pierce, Pierce Propane Co., Duncan, second vice president.

The board of directors, to serve two years: J. L. Grigsby, Oklahoma Butane & Propane Co., Oklahoma City; George Self, Self Butane Co., Ponca City; Glenn Moore, Western Oklahoma Butane-Propane Co., Geary; J. O. Green and Grover Pierce.

Holdover members of the board of directors are R. L. Epple, Epple Butane Co., Tecumseh; Charles Monroe, Northern Oklahoma Butane Co., Perry; J. E. Jones, Sooner Butane Gas Co., Pauls Valley; J. V. Stewart, Stewart Hardware Co., Medford; C. O. Whisnand and Francis Borelli.

Butane Company Opens Business in Gage, Oklahoma

Another new Oklahoma LP-Gas dealer opened for business recently when A & H Butane Co., of Gage, began operations.

B. W. Harrell and Arthur Ashpaugh are the proprietors of the new enterprise.



The Wilson home which is entirely served by L.P-Gas.

Country Living Deluxe

WHEN Mr. and Mrs. Charles A. Wilson retired from business in 1941—Mr. Wilson from his insurance career in New York City and Mrs. Wilson from her career as housewife in Elizabeth, N. J.—they settled upon southern Florida to settle down for the enjoyment of their well-merited rest. But they were determined not to make their future home in a thickly settled city.

So, after much exploring, they found the very spot which fulfilled all their ambitions for the location of their dream house. It was on a bayou on the fringes of a new development—Bellevista, 10 miles out of St. Petersburg, Fla.

As the Wilsons rhapsodized on the beauty of the calm waters of

By JOSEPH LAWREN

the bayou which lapped the tree-lined plot upon which their dream house was to stand, a sudden horrifying thought broke in to turn Mrs. Wilson's dream into a nightmare. There was the ideal location; before them were the rough sketches of their ideal home but where, oh where, was the gas for heating the home, and water, and servicing their noiseless Servel?

"Surely," said Mrs. Wilson, in alarm, "there are no gas lines here, so far away from St. Petersburg. I'm afraid we'll have to go into the city to live for I can't cook without gas," she ended dolefully.

Mr. Wilson, no expert in bottled gas, tried to console his wife. "Our architect will find a way," he said without great conviction. And so to the office of their architect, Winfield Lott, of St. Petersburg, went the troubled Wilsons. And out of the architect's office emerged the Wilsons, happy in the assurance that their dream home would be serviced by gas—bottled gas.

"But you know," the Wilsons had emphasized to Mr. Lott, "we want our home not only comfortable the year around, we want it beautiful inside and out."

The architect smiled indulgently. "You shall have it so," he said. "There will be no gas container visible. The gas tank will be under-

ground; the grass will grow above it and the small gas intake will be hard to detect." The Wilsons returned to await the building of their home. The architect turned over the job of the gas installations to the St. Petersburg Gas Appliance Co.

Eugene S. Lanning, a partner of the firm and a gas engineer for 31 years, worked out the liquefied gas plan in conjunction with Robert W. Hawk of his heating engineering staff. They knew that here was a job which called for the best of planning and the best of equipment. For they realized that their clients were not only discriminating but a potential source of good will for future business. Here the many friends of the Wilsons would have display rooms to see and experience the value of liquefied petroleum gas in the home.

The instructions given to Mr. Lanning by his client were short, simple and reassuring. "You know what is best. Do your best. And never mind the expense." Lanning and Hawk did their best. But they did mind the expense. The expense was under \$1000 for the complete job and installations. And the Wilsons declare that it was the cheapest investment they ever made.

Dream House

For when the house was finished it was the veritable dream house which the Wilsons had visualized for so many years. The architect had designed a tiny room hardly larger than a closet, to house the heating and hot water installations. It opens from the large living room in easy reach for inspection of its



Mrs. Wilson in her all-gas kitchen.

gas equipment. But, as the Wilsons explained, "We never have to inspect the hot water tank nor the winter air conditioner for they are fully automatic. The only time we inspect the machines in that little room is when we try to discover what makes them so entirely noiseless."

Five Years With LP-Gas

The Wilsons have had five years to test the virtues of their all-liquefied gas serviced home and to revel in its luxurious comfort. "What a joy," they declare, "to live in a home free of ashes, dirt, dust, noise and visible heating units. To feel and breathe clean, warm, humidified, circulating air which, when it grows cold, is automatically withdrawn from our home."

But it was Mrs. Wilson who waxed lyrical when she spoke of her new gas kitchen with its "Magic Chef" range, Servel refrigerator, well-arranged cupboards and shelves and its concomitant convenience and beauty.

"Well you know," she said, "the kitchen is where the woman reigns—and in this case, happily."

Mr. Wilson beamed with pride. "You ought to taste what comes out of that all-gas-fired kitchen," he said.

"And we have added one more game to our list," continued the head of the house. "It is finding the gas tank. When our friends ask us, 'But where does the gas come from?' we tell them to find it. If and when they do we reward them with a slab of pie out of the gas-equipped kitchen."



The heating unit's small compartment.

Your reporter played the game of "Find the gas tank." He didn't discover it but anyway he was rewarded with a slab of Mrs. Wilson's famous pie.

New Arkansas Company Gets Permit to Sell LP-Gas

The LP-Gas and Equipment Co., of Fayetteville, Ark., has filed articles of incorporation with the secretary of state in Little Rock and has received authorization to distribute and sell liquefied petroleum gases, gasoline and automotive equipment.

Authorized capital is \$50,000, and incorporators are Cy Carney, Cy Carney, Jr., K. M. Comstock, Ira V. Comstock and Joe McKim.

What Anhydrous Ammonia Demand Means to Butane-Propane Industry

By BOB FARSON

THE Louisiana State Agricultural Commission held a meeting at its Shreveport experimental station on Dec. 12 for the purpose of explaining the present anhydrous ammonia program.

This meeting was attended by approximately 300 county farm agents, large plantation and farm owners and other interested parties. The group was addressed by leading agronomists of various state agricultural colleges that have made exhaustive experiments and investigations into all phases of this program.

Following the discussion period, actual field demonstrations were held by two of the leading manu-

facturers and distributors of the equipment necessary for the handling and application of anhydrous ammonia. These two companies and their representatives were: Paul H. Phillips, The Anhydrous Ammonia Equipment and Manufacturing Co., Shreveport, La., and William Gotcher, Gotcher Engineering and Manufacturing Co., Clarksdale, Miss.

Anhydrous ammonia is a liquid fertilizer with properties similar to propane but which must be handled entirely separately and differently



Actual demonstration of fertilizer application.

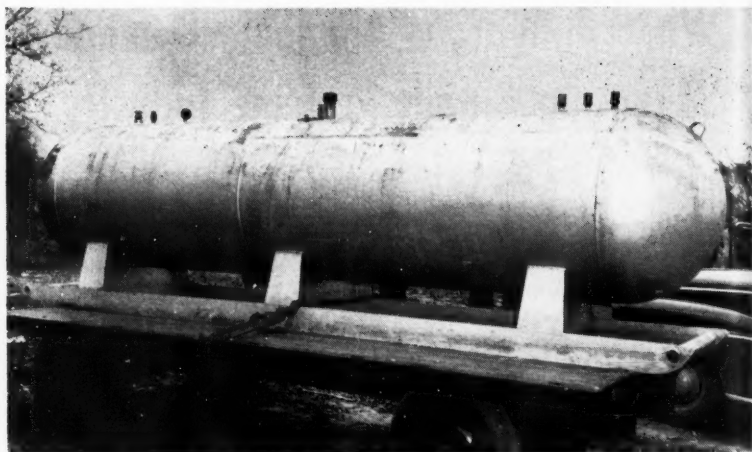


Fig. 1. This is a typical anhydrous ammonia 1000 gal. skid tank for use in field.

from any type of LP-Gas. It is in liquid form at -28° F. and must be stored in a pressure vessel similar to propane. At 100° F. anhydrous ammonia has a 197 lb. working pressure and as a result must be handled in a propane type tank with a minimum 200 lb. working pressure.

Fittings Must Be Steel

The usual brass or bronze fittings used with LP-Gas are in no way suitable to the handling of anhydrous ammonia as indicated in detail in an article entitled, "Hazards of Anhydrous Ammonia When Used in LP-Gas Equipment" in the December, 1947, issue of BUTANE-PROPANE News. It has been found that all fittings and metal parts involved must be of steel, and acid

resisting neoprene hose with steel wire braid is needed for connections. A standard propane type tank with all steel fittings is applicable.

Several LP-Gas fittings manufacturers are working on steel fittings for this program at the present time and the Climax Engineering Co. of Tulsa, Okla., has already put on the market through the Anhydrous Ammonia Equipment and Manufacturing Co., of Shreveport, La., a complete set of steel fittings for the users of anhydrous ammonia.

Program Expanding

This program is now being carried on extensively in Mississippi, Louisiana and Arkansas and additional possibilities for development



Fig. 2. Tractor equipped with 120 gal. anhydrous ammonia tank and complete fittings.

on corn, wheat, and other crops is being studied in Kansas, Illinois, Texas, California and at the University of Wisconsin.

Anhydrous ammonia is a liquid plant food and fertilizer contain-

ing 82% nitrogen and is considered superior to solid fertilizers for numerous reasons. Tests show anhydrous ammonia can be fed 4 to 6 inches into the ground to start immediate reaction while solid fer-



Fig. 3. Tractor equipment ready to inject anhydrous ammonia into ground.

tilizers are dependent on rain or other water sources. The plowing of it into the ground allows better distribution, control of amount used, and a better yield per pound of fertilizer.

Increases Cotton Yield

Tests with cotton have shown increases of 386 to 600 lbs. of cotton per acre through the use of anhydrous ammonia. Tests with corn have shown increases of from 30 to 100 bushels to the acre. It is estimated that farmers in the Delta area of Mississippi increased their yield about 4 million dollars during 1947 through the use of anhydrous ammonia. It is 50% to 100% cheaper in actual cost than other fertilizers in pounds of nitrogen delivered.

The pictures accompanying this article are equipment now being used for fertilization with anhydrous ammonia and indicate what is needed. One of these (Fig. 1) shows a 1000-gal. skid tank (which is now being replaced by 1000 gal. tank mounted or strapped on trailer rather than skid) of the type used by farmers to transport their own anhydrous ammonia from the dealer's bulk storage to actual tractor installations in the field. This tank is equipped with the following fittings similar to LP-Gas fittings but of all steel. Filler valve, slip tube gauge, pressure gauge, vapor return valve, relief valves and an excess flow valve for liquid withdrawal.

Other pictures (Figs. 2 and 3) show the actual tractor installa-



Fig. 4. Shown here is a rubber hose carrying the anhydrous ammonia to the applicator feet which dig 6 inches below surface ground to bury the fertilizer.

▲
Another view of tractor equipment for applying anhydrous ammonia.
▼



tion. This is a standard tractor equipped with a 110 to 120 gal. propane type tank, 200-250 lbs. working pressure, with all steel fittings which include $\frac{3}{4}$ " relief valve set at 240 lbs., slip tube gauge or 10% outage gauge, $\frac{3}{4}$ " vapor return valve, $1\frac{1}{2}$ " filler valve, $\frac{1}{4}$ " pressure gauge, and angle valve.

Flow Controlled

The liquid from the tank passes through the angle valve to the flow controller just to the right of the driver. This is a controller-regulator and liquid line valve which allows specific flow regardless of pressures on the tank and manifold. It then passes through a needle valve which controls pressure set against the $\frac{3}{32}$ " orifices. By controlling pressure, the amount of anhydrous ammonia delivered to the ground can be varied. The controls also include

a quick shut-off valve to facilitate immediate shut-off of product to raise or lower applicator feet blades with power lift.

Applied in Vapor Form

The anhydrous ammonia then passes through rubber hose to the applicator feet. It is 75% to 85% vapor when it reaches the applicator feet as indicated in Fig. 4. The applicator feet are knives with cutting edges which run approximately 6" under the ground surface, where anhydrous ammonia vapor is best applied. Immediately following the knives are disks to cover furrow and seal the anhydrous ammonia into the ground. Most installations at present are for 4 rows.

It is necessary to use rubber hose rather than steel pipe to keep anhydrous ammonia from freezing.

For any pipe seal or connection,

use of a mixture of litharge and glycerene (lead monoxide) has proved most efficient and is probably the only compound suitable. All grease or paint must be removed before application of compound. When gasket seal is used, gaskets should first be soaked in graphite and oil and flange faces should be smooth and polished for perfect seal.

Safety Measures

It is strongly recommended that when a man is in attendance during any major loading operation he be equipped with rubber galoshes, rubber suit complete with hood, ammonia gas mask and rubber gloves. Anhydrous ammonia will burn badly and injure eyes when not properly handled but does not have the explosive and inflammable qualities of LP-Gas.

It is logical that some LP-Gas dealers, manufacturers, producers and equipment suppliers may take part in the anhydrous ammonia program.

For the dealer, much of the anhydrous ammonia peak load time is at the off-load time on butane and propane. While similar equipment is needed, it is recommended that separate equipment be used. It would be easy enough for the LP-Gas dealer to sell the farmer his equipment and in most cases there would be no necessity for the dealer to have to transport the product. The most practical method seems to be for the farmer to fill his 1000-gal. tank mounted on a trailer at the bulk storage or cars to get the product direct to his tractors in the

field. This is being done in most cases now.

Under this plan all the separate equipment the LP-Gas dealer would need is separate bulk storage for the anhydrous ammonia and the facilities for selling and servicing the equipment used by the farmer.

As indicated earlier in this article, a number of the LP-Gas fittings manufacturers are now working on anhydrous ammonia fittings, and pumps and compressors are already in the field on test and it appears they will do the job.

Several of the LP-Gas producers and marketers are looking the program over from the standpoint of their ability to transport anhydrous ammonia during its peak period when the butane-propane industry demand on cars is low.

While only in its infancy now, the anhydrous ammonia industry seems to have an attractive future, possibly related to the LP-Gas industry in both its rapidity of growth and manner of handling.

LPGA North Central District Meets in Chicago April 1-2

Approval for a meeting of the North Central District has been voted by the board of directors of the LPGA. The district meet will be held with exhibits April 1-2, at the Sherman hotel, Chicago.

The district includes the states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. E. J. Gustafson, Town & Country Gas Co., Sioux Falls, is director for the North Central District.

Study Fuel Characteristics to Be Safe

WHEN the Texas Butane Dealers Association held its meeting in Galveston at the Galvez hotel, the hotel management refused permission for the use of butane — regardless of how small the quantity involved — in any of the exhibits and in the demonstrations by Bureau of Mines engineers, although the demonstrations were approved by the city fire marshal.

The Jefferson hotel in St. Louis also refused to permit the use of liquefied petroleum gas in any of the exhibits or in our demonstration. Why?

Prior to April 16, 1947, Texas City, Texas, was a thriving seaport handling larger shipments of petroleum than any other port in the United States. During the previous year over 73,000 tons of ammonium nitrate fertilizer had been received in railroad cars and exported to foreign countries. At 9:12 a.m. on April 16, 1947, over 600 persons had been killed and many injured, and several millions of dollars' worth of damage had been done. At 1:10 on the morning of April 17 another explosion destroyed most of the remaining plants; the docks were destroyed completely, and a large area was devastated. Why?



G. M. KINTZ

By G. M. KINTZ^{1 2 3}

The Bureau of Mines engineers who investigated the disaster at Texas City believe that it occurred because the people handling the ammonium nitrate fertilizer did not know its characteristics. Smoking was permitted because they did not know the danger; neither did they know what to do when the conditions were out of control.

During the time of the disaster several radio broadcasters said that there might be an explosion of butane and that if a butane explosion did occur it would be worse than those explosions which already had destroyed most of the area.

Why is butane such news? Why are some people afraid of it? A study of the following questions may give the answer.

1. Why Do Newspapers Headline LP-Gas?

a. A number of very serious and spectacular accidents involving lique-

¹ Presented by permission of the Director, Bureau of Mines, United States Department of the Interior, before the Second Annual Convention and Trade Show, Texas Butane Dealers Association, Galveston, Tex., June 9-11, 1947, and before the Second Annual Convention and Trade Exhibit, National Butane-Propane Association, St. Louis, Mo., Sept. 15-17, 1947.

² Supervising Engineer, District G, Health and Safety Branch, Bureau of Mines, Dallas, Tex.

³ Paper read at the St. Louis meeting by H. F. Browne, Petroleum Engineer, District G, Health and Safety Branch, Bureau of Mines, Dallas, Tex.

fied petroleum gas have occurred, resulting in the deaths of several persons and much property damage.

b. Because of their lack of knowledge of liquefied petroleum gas, many people, including city officials, are afraid of butane or propane.

2. Why Do These Accidents Occur?

a. A workman has followed an unsafe procedure for such a long time without having had an accident that the practice has become a habit. (He neglects to hook up the return vapor line; he bleeds tanks of liquefied petroleum gas into the open; he smokes during filling operations, etc.)

b. The dealer and his workers take chances. Perhaps they call it being busy or rushed. No matter what they call it, they take a chance; they gamble.

c. A workman fails to think. He intends to return and extinguish the cigarette. He is sure that he has time to get a cup of coffee while the tank is filling. He has done it many times and nothing has ever happened, so he thinks it won't this time.

d. Workmen become tired.

e. A workman procrastinates. He knows that an appliance needs repairing, but he does not take time to do it.

f. Everyone, specially in these days of high prices, is inclined to be "penny-wise and pound-foolish." (1) The correct type of fire extinguisher is too expensive. (2) A good valve or regulator costs more than an inferior one. (3) Many people think that they can have safety without paying for it.

g. The supervisor or the workmen do not know the facts about or the characteristics of liquefied petroleum gas or the equipment in which it is used, and the supervisor does not analyze the job or his workmen.

Since these are the facts, they

can be graphically represented by three large circles, each enclosing a group of three small circles (Fig. 1). In circle No. 1, one small circle represents the manufacturers of liquefied petroleum gas; another, the dealers who sell it; and the third, the appliance manufacturers.

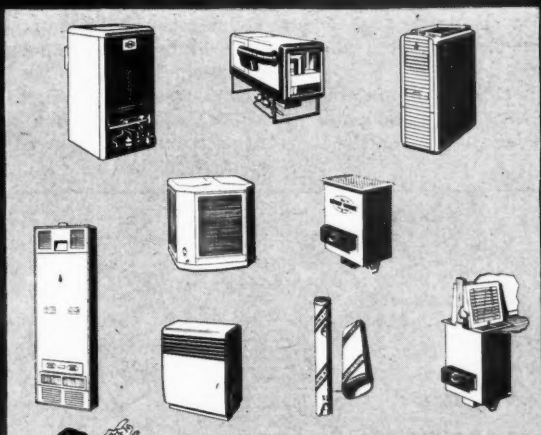
In circle No. 2, one small circle represents the butane dealer; another, his employees; and the third, his customers.

In circle No. 3, one small circle represents the liquefied petroleum gas industry as a whole; another, the public, including the newspapers; and the third, the regulatory officials. Each circle represents the knowledge which that group of persons has of the liquefied petroleum gas industry. The solid areas represent the knowledge common to all. The crosshatched areas represent the knowledge possessed by any two groups of persons.

The aim of the industry must be for all the circles to approach a common orbit. But how can this be accomplished? If two X's are drawn side by side (XX), anyone looking casually at them would describe them as two X's. But if he studies the design, analyzes it more carefully, and shuts the two X's from his mind, he will see other letters or figures, such as

XX ◊ XX ◊ 4

⁴ The two-X design was used by J. F. Agar, Michigan Bell Telephone Co., Detroit, Mich., in a talk before the National Safety Congress, Chicago, Ill., Oct. 8, 1946. When this paper was presented, the two large X's joining each other were drawn on a blackboard and the audience was requested to describe the designs and letters that could be made out of the figure.



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FEBRUARY — 1948

91

No one can possibly see all these figures at one time. He has to blot out one set to see the other. His mind is like a moving picture machine or camera; he sees one frame at a time. It should be true in his everyday work; he should analyze each job step by step.

If one part of the line in the double X design is erased, not all the figures or letters exist. It is

the same with every action of a supervisor, every job performed, and every piece of equipment sold. Do you ever stop to analyze why you do something or why workmen disobey orders? If your car stops on the highway, do you take a sledge hammer and smash in the engine? Of course not. You get out, lift the hood, and try to find the cause of the trouble. If you cannot repair

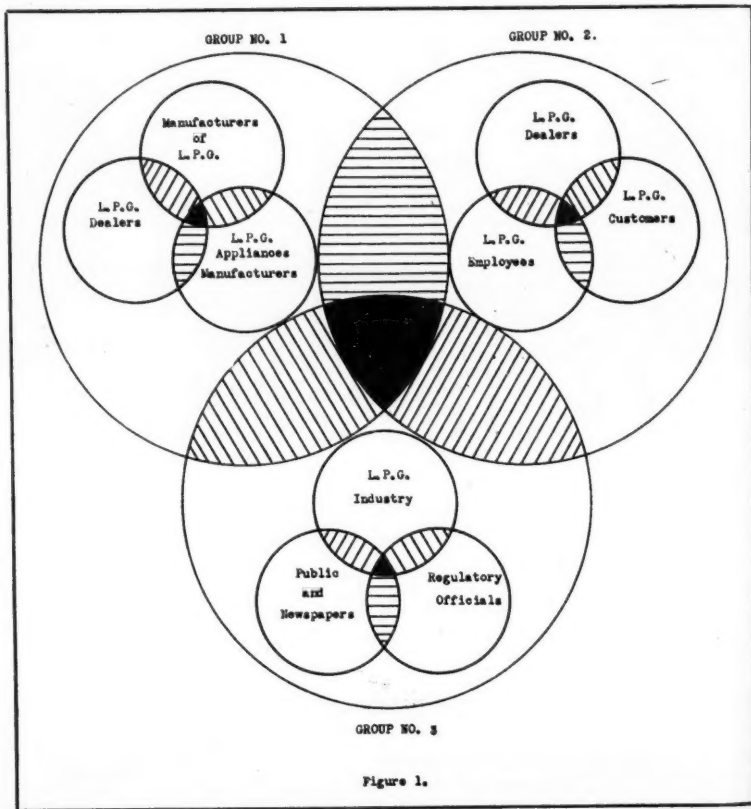


Figure 1.

the car, don't you call a trained person to do it?

If you, as a supervisor, met one of your drivers traveling 60 miles an hour on the highway after you had given him explicit instructions not to travel over 45, what would you do—fire him? Each one of us is a machine. We operate according to definite laws. We do things for a reason. Why not treat your driver and other employees as well as you do any machine or the engine in your car? Why not analyze the cause of the worker's disobedience? Maybe you are to blame. Perhaps you will find that the reason is one of the following:

1. He thinks that you will praise him more for serving a large number of customers than you will for his being slower and safe.

2. He has watched you and has decided that this safety "ballyhoo" is "bunk." He resents your putting emphasis on safety at meetings and then not practicing safety yourself. Perhaps he has seen you drive 60 miles an hour. Do you insist that he "do as I say, not as I do"?

3. You and your company give only "lip service" to safety. You "raise the roof" at safety meetings once a week or in the summertime and then demand excessive speed of operation during the rush season.

4. Your management-employee relationship is not good, and—justified or not—he has decided that there is nothing to be gained by cooperating with you or the company.

If your men are not cooperating, you have left out part of a line in the design, or you are looking at only one frame of the picture. Apply the two-X design to the employee and yourself. In this case, the two

X's could be your safety program. The two small v's over the two small inverted v's would be your educational program or job training; the inverted V over the large V, your mental attitude; the W over M, worker and management relationships; and the diamond, your public relations. If you do not include each and every one of these in your picture, you are not analyzing the job correctly.

There is another use for this design as it applies to the various persons in the liquefied petroleum gas industry. The double X could be the manufacturers of the product; they have a viewpoint. The two v's over v's could be the dealers; they have a viewpoint. The inverted V over V could be the appliance manufacturers; they have a viewpoint. The W over M could be the consumers; they have a viewpoint. The diamond could be the press and the public; they have a viewpoint. However, the picture is not complete without the state, county, and city officials.

Education Eliminates Accidents

All this seems to focus on one problem—education. If accidents are to be eliminated, everyone must be educated in the characteristics of liquefied petroleum gas when it is under control and when it is out of control. Every supervisor and workman must be trained to analyze the job, the personnel, and the product to be sure that every detail is in the picture.

The Texas City disaster is an excellent example of how thorough the educational program must be

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THE OF LP GAS EQUIPMENT

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PRECISION EQUIPMENT FOR USING AND CONTROLLING LP GASES

if accidents in any industry handling inflammable products are to be eliminated. Had the supervisory personnel and the longshoremen loading and handling the ammonium nitrate fertilizer known the characteristics of that product, it is probable that the fire which caused the detonation would not have occurred, and they would have known how to extinguish the fire before it got out of control.

In their demonstrations the Bureau of Mines engineers have called attention continuously to the fact that when a gas line is placed in a confined, unventilated space where it cannot be inspected and tested properly a dangerous condition can develop.

Insuring Buried Tanks

Last year at meetings throughout this country attention was called to the need of insuring that buried tanks and lines are properly protected against corrosion. Attention was called to the need of coating these tanks and lines with proper materials and also the need in many locations of using some kind of cathodic protection.

Some of the fire marshals, sheriffs, drivers of butane trucks, and members of fire departments have an appalling lack of knowledge in the handling of liquefied petroleum and natural gas fires. This fact is well demonstrated by an \$18,000 loss to a butane company in Texas. While a truck driver and his helper were changing a pump on a "bob-tailed" delivery truck standing in the open, the gas coming from the pump and the lines to the pump caught fire. There were about 300

gallons of fuel in the tank. The valves were shut off, but the gas leaking from the line between the back cutoff valve and the pump reached an open flame about 12 or 15 feet from where the truck was standing.

At this time the use of the available hand fire extinguisher would have extinguished the fire and prevented the loss. The driver and his helper became panic-stricken and ran off. The heat from the fire around the pump caused the safety valve on the tank to pop off and the escaping vapors to catch fire, causing a rather fierce blaze. By this time the fire department, the sheriff's department, and all the ambulances in the town had been summoned. The owner of the company was at a store downtown. The first thing the sheriff and the fire marshal did was to block off the highway and reroute traffic. They also forbade anyone's going on the property—including the owner and his employees. The wind caused the flame and the heat from the burning pop-off valves to ignite the warehouse; it burned to the ground, and all its contents were destroyed.

Cooperation Needed

It seems probable that there never was a time when the fire could not have been controlled had the fire department been familiar with the product and the use of water fog on the equipment involved in the liquefied petroleum gas fire. This is a concrete example of the need of cooperation between liquefied petroleum gas dealers and the fire departments in the handling of fires involving liquefied

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petroleum and other inflammable gas products.

The Texas City disaster was most probably caused by a burning cigarette, the tobacco from a pipe or cigar, or even a match carelessly discarded by a smoker. The arc of a switch operating a motor ignited the gas at the New London school. Probably an electric arc, perhaps from a fan, ignited the gas at the Baker hotel. The arc of an ordinary lightswitch ignited the gas that caused the explosion at New Orleans. Flames from matches ignited gas that destroyed the hydro gas plant at Corpus Christi, Tex., and the beauty shop at Harrisonburg, Va.

These same common sources of ignition can and usually do exist in the plants and on the trucks of most liquefied petroleum gas dealers. Examine your equipment—your trucks, storage tanks, tools, and men. Do you have explosion-proof electrical equipment around your plant? Do your men smoke when transferring liquefied petroleum gas? Does your truck have a pipe line or fitting that may come loose and release liquefied petroleum gas when it passes over a rough road?

Danger from Electricity

It happened to a dealer near Greenville, Tex., resulting in a fire that caused the loss of lives and property. Is the truck hose equipped with a safety valve? What kind of electrical equipment is on your truck? What kind of fire extinguisher is on it? When was it thoroughly inspected and tested? Are

your men trained in its use? When liquefied petroleum gas is being transferred between the truck and the supply or container tank, are the tank and truck electrically bonded so that there will not be a difference of potential which might create a spark between them, the piping, or other equipment?

It is common knowledge that a person walking across a rug or wearing woolen or sheep-lined clothing that rubs against another cloth can build up a static charge on his body sufficient to create a spark which will ignite an inflammable mixture of gas and air. A sufficient amount of static electricity can be generated by pouring liquid from one insulated container into another to cause an igniting spark.

Guard Against a Static Charge

A truck driven on the highway may build up a static charge; if the truck is not bonded to the container, a spark may jump from the end of the fill hose to the container, resulting in an ignition. Perhaps your truck has been traveling along the highway and pulls into your plant; you go over to speak to the driver; as you start to touch the truck a spark jumps between the truck and you. If you are in an inflammable atmosphere, an ignition may take place.

These facts are presented in an endeavor to point out that the biggest problem facing the liquefied petroleum gas industry is one of education—education of the manufacturer, the dealer, the appliance manufacturer, the workmen, the



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state, county, and city officials, the newspapers, and the public as a whole.

Many of you are familiar with the demonstrations that Bureau of Mines engineers have been conducting throughout the United States. At the request of Homer Garrison, Jr., director of the Texas Department of Public Safety, Bureau of Mines engineers have conducted a special course in the handling of fires involving liquefied petroleum gas, gasoline, and other inflammable petroleum products for every member of the Texas highway patrol. Over 320 patrolmen completed this course, and plans have been made to conduct another course for the new patrolmen as they are employed. Last July, at a course given in conjunction with the Firemen's training school at Texas A. & M. college, more than 600 fire marshals, firemen, building inspectors, and men in industry attended a demonstration on the handling of liquefied petroleum gas and other inflammable and explosive substances. Members of the Texas Butane Dealers Association went to their city managers and arranged—and in many cases paid the cost—for a fireman from that city to attend this school.

Investment in Safety Needed

These are some of the things that the Bureau of Mines engineers in conjunction with the Texas Butane Dealers Association and other organizations have been doing in Texas. Although the Bureau of Mines cannot do this for all states, it is recommended that some such

program be followed. When you as a dealer go home from this meeting, ask yourself, "What am I doing for the benefit of the liquefied petroleum gas industry, especially to improve the industry's public relations?" The only way that the liquefied petroleum gas industry can accomplish its purpose is to make a heavy financial investment in safety. An investment in safety has never fail to pay big dividends in cash and in improved employe and public relations.

By the participation of employees in the safety meetings, the use of motion pictures or slides, and actual demonstrations of equipment or reproduction of conditions, it is believed that liquefied petroleum gas dealers will be successful in developing personnel safety consciousness and good employe and public relations.

Bottle Filling Plant Shipped To Fortaleza, Brazil

V. Stark, president of the North American Utility & Construction Corp., of New York, announces that his company has provided the technical knowledge and supplied the complete equipment for a bottle filling station in Fortaleza, Brazil.

The filling station consists of a storage tank of 2000 gallons with pump, automatic manifold and scales. North American Utility & Construction Corp. also supplied 4 skid tanks of 540 gallons capacity each, which were shipped filled with propane.

These skid tanks will be used for hauling gas, either on deck of ships or otherwise. They also supplied 1000 100-lb. cylinders which were shipped from this country filled with propane to reduce the freight cost.



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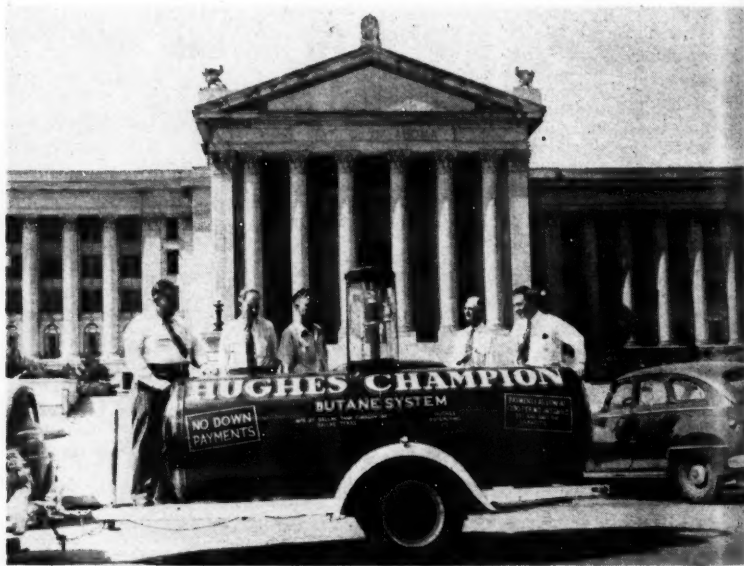
Oklahoma Dealer Develops New Butane System

L. L. Hughes, Oklahoma City, Okla., is distributing the "Hughes Champion Butane System," invented by himself. He has established dealers in several states where he has secured approval of the system by liquefied petroleum gas regulatory authorities. He operates under the name of The Hughes Distributing Co., of Oklahoma City.

The "Hughes Champion Butane System" includes a standard butane tank to be installed underground. This is equipped with two special de-

vices. One is a $\frac{3}{4}$ -inch vapor line which runs to the bottom of the tank and eliminates condensations. The other device is a liquid withdrawal line which extends from the dome into the lower part of the butane tank. The vapor line is sealed off from the liquid.

To the top of this pipe the farmer, who uses butane in his tractors or other farm machines, can attach a fuel hose and draw off the butane when needed for his equipment without disturbing the operation of his tank. Both devices were approved by T. J. Ellis, former Oklahoma state fire marshal, who was liquefied petro-



"Hughes Champion Butane System," mounted for demonstration and transportation purposes on specially built trailer attached to butane-gasoline-fueled passenger car at extreme left. Examining the equipment are, left to right: L. L. Hughes; T. J. Ellis, former state fire marshal; Walter Choate, chief inspector; C. S. Vawter, assistant state fire marshal, and William T. Harnal, Oklahoma Publishing Co.

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leum gas administrator for the state. These are manufactured for Mr. Hughes by The Dallas Tank Co.

As a farm boy in 1927 east of Erick, Mr. Hughes became familiar with the use of bottled liquefied petroleum gas in his father's household. He studied its operation for a while and then, in 1930, he went into business for himself at Erick. He sold and installed butane gas systems and Electrolux refrigerators.

In 1936 he became the dealer in his section of the state for The Dallas Tank Co. He stocked radios, electric appliances and other major lines, operating under the name of the Hughes Radio and Electric Co. He also established a store under the same name at Silverton, Texas. Within a few years he built up a business with gross sales of \$100,000 a year.

In 1945 he sold the Erick business to Floy E. Williamson and Don L. McCartor and disposed of his Silverton interests to George Seaney. Shortly afterward he established the Hughes Distributing Co. to distribute the Hughes systems and to act as dealer for airplanes, automobiles, trucks and school buses.

Propane-Air Plant Successful In Old Manufactured Gas Town

By JOHN E. HUBEL

Since early 1947 the Wisconsin Fuel & Light Co., Manitowoc, Wis. (a city of about 24,500), has furnished propane gas to all of its city customers. It is furnished exclusively for domestic, commercial and industrial use in that area through the regular mains.

Up to the first of October the company has given such service to about 4200 domestic, 150 commercial and 22 industrial customers. Prior to 1947 the company had been supplying

manufactured gas for 46 years in that area.

According to the Chamber of Commerce of Manitowoc, nearly all cities of southern Wisconsin are expected to be served with natural gas by 1950, so that switching over to propane gas service until natural gas is available was considered the proper thing to do. This, no doubt, to get customers accustomed to the higher Btu of other than manufactured gas. The Btu value for the manufactured gas supplied by this company was 520; for propane gas served, it is 1300. The price is left the same as formerly charged for the manufactured product.

Get Tank Car Shipments

The Manitowoc utility purchases the propane gas from the United Petroleum Gas Co., the product being supplied in tank cars in sufficient quantity to supply all of the gas that is needed for the purposes mentioned. The management at Manitowoc is frank to say that propane gas is somewhat more difficult to handle than was manufactured gas, for the following reasons:

It is necessary to use steam and oil fogging in handling propane gas. Great care must be exercised in converting ovens to assure proper lighting. There must be 100% shut-off in the piping. Draft diverters must be installed in all vented appliances. "CP" gas ranges should not be sold, as they do not have 100% shut-off for the ovens. It was found that stick-type conversion burners have noisy ignition, but this is being overcome, according to the engineer in charge of such work.

Since the propane gas distribution was installed in Manitowoc, but little complaint, if any, has been made, as customers like the new gas, due to its higher heat value.

Butane and Propane

A Look at Past, Present, and Future

By W. H. Somerton

Instructor of Petroleum Engineering, University of California, Berkeley, Calif.

WITH present day unsettled economic and industrial conditions, so many uncertainties enter into the prediction of the future of any industry that little more than broad generalities may be stated. Many unique problems are encountered in the LP-Gas industry, thus making such a prediction even more difficult.



W. H. SOMERTON

We have no normal past history on which to build, for the industry was in its infancy at the advent of the war. During the war period, restrictions in the use of LP-Gas fractions and the diversion of a large part of the production to "unnatural" uses, prevented the full development of steady markets. Even at the present time, the sources of supply are neither fully developed nor assured.

Nevertheless, there are many indications of what we might expect in the future as to the supply and demand of butane and propane and some of the problems that may be encountered are apparent.

Supply and Demand for Petroleum and Natural Gas

The future of the liquefied petroleum gas industry cannot be adequately discussed without reference to the future of the petroleum industry as a whole. The many liquid and gaseous products and the processes employed to obtain these products are very much interrelated and interdependent.

In recent years, due to the accelerated rate of crude oil production in the United States, the annual addition of new reserves has not kept pace with the annual production. Figure 1 shows a plot of the ratio of total reserves to annual production for the past 10 year period. The general downward trend in this curve, commencing at the end of 1939 and becoming more pronounced in the period 1943-45, has been a

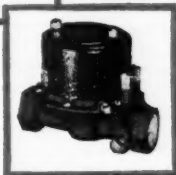
The LP-Gas industry needs to be frequently reminded of the economics of supply and demand. Dealers and distributors who understand the existing fuel situation are better fortified to cope with the consumer's needs.

Mr. Somerton gives here an excellent analysis of current problems and future possibilities. He presented a similar paper to the Berkeley short course at the University of California last summer.—Editor.

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matter of considerable concern. This trend was partly due to the increased rate of production during the war period and the shortages of materials and equipment.

It is encouraging to note the upward trend in 1946, a continuation of which will alleviate a threatened shortage of crude petroleum. The natural gas reserves production ratio curve as shown in Figure 1 displays a very favorable upward trend. It will be noted that the corresponding ratio curves for Califor-

nia are considerably lower than the national average and that no upward trend is in evidence. California carried most of the burden of supplying fuel for the Pacific area during the war and our reserves have suffered a loss from which we may never recover.

These figures do not give the complete picture, for the addition of both oil and gas to our known reserves is becoming increasingly more difficult and more expensive. The use of the very valuable but

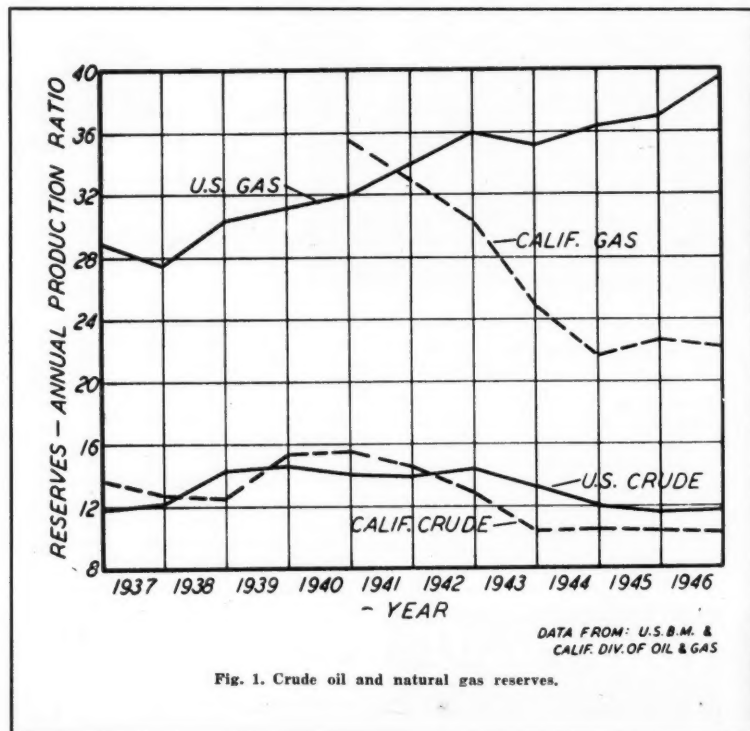


Fig. 1. Crude oil and natural gas reserves.

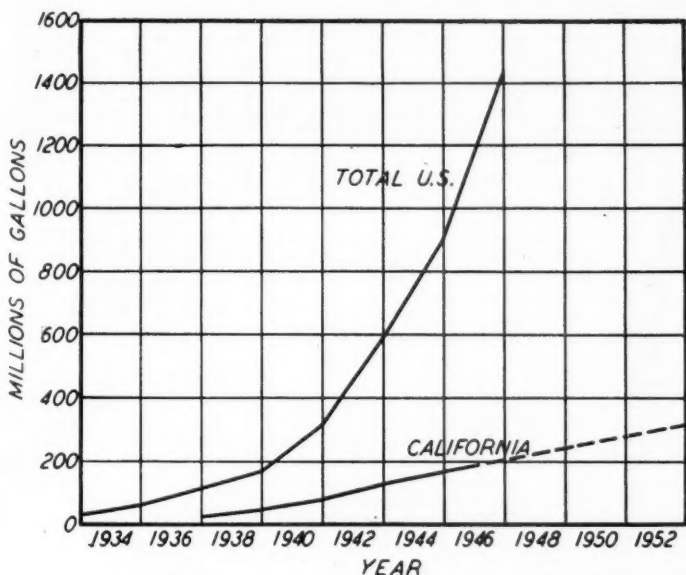


Fig. 2. Liquefied petroleum gas sales.

DATA FROM: U.S.B.M.

costly geophysical exploration methods, the drilling of more holes to greater depths, coupled with increased costs of materials and equipment, have made the finding and producing of new petroleum reserves an expensive business.

There appears to be no real limit to the overall demand for petroleum products. Even with the termination of the war, the demand for crude petroleum has not dropped appreciably, while the demand for natural gas and LP-Gas has con-

tinued to rise. Competition from atomic power, electric power and solid fuels has been discussed at length, but in the final analysis it appears that the only restriction on the sale of petroleum products will be the question of future supply.

Future Supply of Liquefied Petroleum Gas

The supply of liquefied petroleum gas comes from many sources, the most important of these being natural gasoline plants, cycling plants, and refineries. Natural gasoline and

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Controls for air, water, steam, natural, manufac-
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cycling plants depend to a large extent upon the liquefied petroleum gas industry as an outlet for their by-products, and in some plants liquefied petroleum gas sales represent the margin of profit. This is a very natural and fortunate relation between these two branches of the industry and it should by all means be furthered for the common good of both.

The contributions from refineries represent the excess of the total available liquefied petroleum gas

fractions from the amounts used in refinery processes. This is a potential source that would more than double the current supply, but it is, at best, only a potential added source, for liquefied petroleum gas fractions are valuable for blending, polymerization and other refinery uses. However, if the economic balance between the value for refinery use and the value for sales, as such, could be swung in the direction of liquefied petroleum gas sales, this potential source could become real.

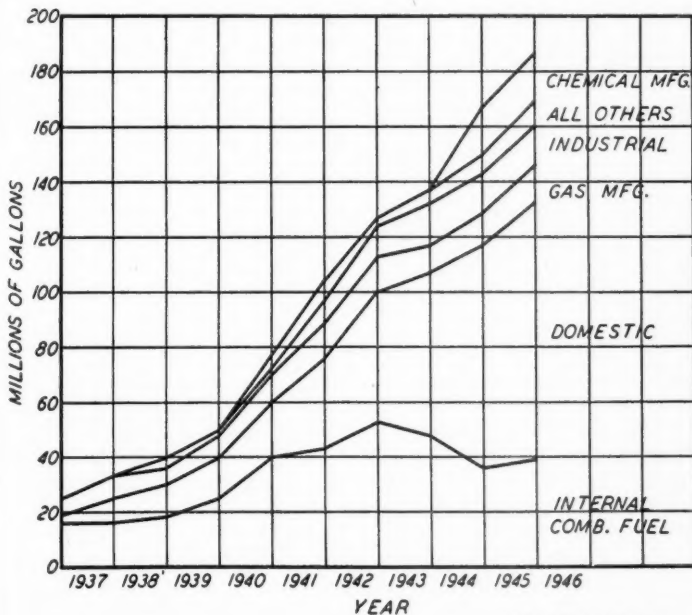


Fig. 3. Breakdown of Pacific Coast district LP-Gas sales.

DATA FROM: U.S. B.M.

In fact, the entire problem of liquefied petroleum gas supply is an economic one. If the liquefied petroleum gas industry can offer the refiners and producers a steady and attractive demand, there seems to be no question that the industry will be capable of satisfying its indicated sales demand.

Other Butane Outlets

On the other hand, if refiners and producers are not offered a reliable market, they may seek more favorable outlets. There has been a growing demand for LPG fractions for chemical manufacture, a demand which could, conceivably, reach such proportions as to menace the future supply for other purposes. During the war we witnessed a large increase in the use of butanes for refinery purposes. However, current trends toward the use of thermal and catalytic cracking processes in increasing anti-knock ratings of gasoline may sufficiently increase the yield of LPG fractions to offset increased chemical and refinery use.

There has been recent discussion as to the feasibility of injecting liquefied petroleum gases into petroleum reservoirs containing heavy, high viscosity crude. Under suitable reservoir conditions, a mixing of the light liquid with the heavy crude would reduce its viscosity and increase its ease of recovery. If such a process should prove practical, the LP-Gas industry may be faced with a problem similar to that of the natural gas industry, where large quantities of gas are being

withheld from the market for injection purposes.

Demand for Liquefied Petroleum Gas

To predict the future of an industry, we must carefully analyze the demands for its products. Figure 2 shows the phenomenal increase in sales of liquefied petroleum gas in the United States and California since the early 30's. As yet, there is no indication of a tapering off of the upward trend, but it is interesting to note that California has lagged behind the rest of the nation in rate of increase.

A conservative extrapolation of the California curve to 5 years hence shows that we can expect a 50% increase in demand. Probably this is an ultraconservative estimate, for the sales of liquefied petroleum gas have been greatly restricted due to lack of equipment and transportation facilities and perhaps an increase of 100% can be expected.

Figure 3 shows the annual liquefied petroleum gas sales broken down into individual uses in the Pacific Coast territory. Domestic use represents close to half of the total sales and has shown the greatest rate of increase in recent years. LP-Gas is rapidly taking the place of solid fuels because of the cleanliness and convenience of the former and increasing cost of the latter. Although an important source of sales, domestic use presents the undesirable characteristics of seasonal fluctuation in demand not found in most other uses.

The loss suffered in internal com-

bustion engine use, due to wartime restrictions, is being regained. Other sales shown on the chart have about held their own during the past few years. A decline in natural gas supply will result in heavy increases in all of these fields. Not only will more LP-Gas go into the manufacturing of gas, but also, more LPG fractions will be used in gas enrichment.

Increased industrial growth will result in increased demand for LP-Gas as a steady fuel and as a standby for "surplus" natural gas users. The prevailing objections to "surplus" sales of natural gas by conservationists may result in many industrial concerns turning to the use of LP-Gas rather than meet the much higher "firm" rates for natural gas. The use of LP-Gas in chemical manufacture begun during the war appears to be a permanent and growing source of sales.

Problems of the Future

In its inevitable growth to an industry of major status, the LP-Gas industry must overcome many existing and future problems. Foremost among these are competition from other fuels; the need for equalizing seasonal fluctuations in demand; and the need for increased markets to prevent diversion to other uses.

Electric power is by far the major competitor of liquefied petroleum gas. LP-Gas continues to make inroads into electric power sales but it remains as the most serious obstacle in the future expansion of the industry. In many areas, electric power can compete in price

with LP-Gas, natural gas, and other fuels. There is some question, however, as to whether there will be sufficient electric power available to meet the needs of the proposed expansion of this industry. Nevertheless, intensive advertising, reduction in costs, and improvement of customer services will be necessary to overcome this competition.

Summertime Waste

During the summer months, substantial amounts of liquefied petroleum gas are being wasted by many operators because of the lack of market outlets, but these same operators find a large and ready market during the winter months. The result is an undesirable situation, both from the standpoint of the waste of our natural resources and unsatisfactory market conditions for the producer, and it is little wonder that operators seek other more stable outlets for their products. This is a difficult problem but some of the proposed methods of solution might be discussed briefly.

The possibility of developing new markets to offset the seasonal fluctuation in domestic demand has been discussed. Such markets may be found in agricultural processes where the heavy demand falls in the summer months. Flame weeding, dehydration, flame ripening, water pumping, and many other summer uses have been developed and are rapidly expanding.

Another possibility is the construction of large scale surface storage facilities, thus holding in reserve summer excesses for winter

consumption. This would entail either high pressure or low temperature storage tanks—an expensive undertaking to say the least. The latter method is being practiced with considerable success in the case of natural gas, which is a much more difficult substance to liquefy.

Underground storage of liquefied petroleum gas may be a partial solution in ironing out seasonal fluctuations. The Carter Oil Co. of Oklahoma has successfully stored in excess of one million barrels of liquefied petroleum gas in a depleted oil reservoir during the summer months to be recovered in meeting winter demand. Although this is a technical engineering project, only applicable in certain cases, the induced recovery of residual oil from partially depleted sands, incidental to underground storage of natural gas, has often more than paid for the expense of storage.

Producers Will Expand

Little more need be said regarding the importance of increased markets for liquefied petroleum gas to prevent the diversion of these fractions to other uses. If a satisfactory market is made available, refiners and producers will not hesitate to try to meet such demand even if it entails the installation of new equipment to increase liquefied petroleum gas yields.

A rather serious problem regarding safety regulations has arisen within the industry as a natural consequence of the numerous agencies involved. Conflicting regulations, unduly strict regulations, and, in some cases, inadequate

regulations, have caused much confusion and occasional disasters which have put the industry in a bad light with at least a part of the general public. With rapid expansion of the industry, adequate and uniform safety regulations are imperative. It is up to the industry as a whole to cooperate with the agencies concerned in developing and enforcing a safety code which will assure the maximum of protection from accidents and explosions.

Shortages of equipment and materials have hampered expansion of the industry and transportation shortages have restricted the development of new markets. However, these problems are of only a temporary nature.

Kansas LPGA Sponsors Service School in LP-Gas

The University of Kansas Extension Division, in cooperation with the Kansas State Board for Vocational Education and the state fire marshal's office, has announced an LP-Gas service school which will be held in Wichita, Feb. 23-26. This undertaking was sponsored and promoted by the Kansas Liquefied Petroleum Gas Association of which R. H. Mahnke is executive vice president.

The short course, entirely practical in nature, will cover the subjects of product, installation procedures, appliances, automatic controls, carburetion, storage tanks, cylinders and bottles, transfer of products, proper venting, rules and regulations, and customer relations.

For most part, instructors will be drawn from the LP-Gas industry.

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SALES PROMOTION KITS WILL BE MADE AVAILABLE

ASSOCIATIONS

All organizations serving the liquefied petroleum gas industry are invited to send to this department notices of forthcoming meetings and reports upon such meetings after they have occurred.—Editor.

New Jersey Association Holds Second Meeting

THE second meeting of the group interested in forming an association for liquefied petroleum gas men in New Jersey was held at the Far Hills Inn, Somerville, N. J., Jan. 12, and brought together 67 men from all over the state.

Edward A. Keible, of Northern Gas Co., Ledgewood, was elected to serve as chairman, and J. L. Earhart, of Blairstown, as secretary for the period until the organization is formed.

After discussion of proposed by-laws modelled after those in other states, a by-law committee was appointed. This committee is to draw up



GUY RICHDALE, Jr.



SEN. A. B. LITTELL

a tentative set of by-laws, and they will be submitted to the membership at the next meeting, which is scheduled for the same place, Far Hills Inn in Somerville, on Feb. 16.

Chairman of the by-law committee is Manny Gale, of Keyport Hardware Co., Keyport. Others on the committee are Wellard Prigge, of C. H. Roberson, Inc., Freehold; Herbert Bartholmew, of Phillips Petroleum Co.; J. F. Casey, of Socony-Vacuum; Arthur Benjamin, of Modern Gas, Woodbine; Lou Katz, of Natural Gas Co. of New Jersey, Hammonton; Al Lum, of Engco Gas Co., Chatham; L. H. Maguire, of Suburban Propane Gas Corp., Whippany; and Harold V. Woodhead, of Raritan Valley Gas Co., Somerville.

H. Emerson Thomas, of Westfield, who had been active also in organizing the association in Pennsylvania, was called on to discuss the purposes and objectives of a state association. First, he said, was fostering the li-



ED. A. KEIBLE



JAS. L. EARHART

quefied petroleum gas industry in the state, and the association should see that the public gets good service and that a profit is made by those in the business. Mr. Thomas also emphasized the importance of safety. He said that an association can foster a friendly spirit in the industry.

There was discussion of a bill introduced in Massachusetts for a 10 per cent tax on liquefied petroleum gas without any mention of other fuels.

Among those present were C. L. Hulswitt, of Warren Petroleum Corp., Newark, N.J.; John Weatherhead, of the Weatherhead Co.; Alex B. Cloud, of American Meter Co.; Guy Richdale, Sr., and Guy Richdale, Jr., of Somerville; Henry Aust and Theodore Aust, of Model Gas Co., Bellemead; Murray Glass, of Modern Gas Co.; Al Milchanoski, Somerset Gas Co., New Brunswick; and Chester Pucio, of Blue Gas, Netcong.

Louisiana

Flame cultivation and dehydration of agricultural products in Louisiana were among varied subjects discussed at a state-wide meeting of the Louisiana Butane Dealers Association in December at Lake Charles. Harold T. Barr, head of the research department of the agricultural division of Louisiana State University, handled these topics.

Norman H. Anderson, Lake Charles attorney, spoke on taxation, and several other topics such as legislation, the winter fuel shortage, and the date for the organization's annual convention were brought up.

The director of the Louisiana Liquefied Petroleum Gas Commission, W. U. Moss, was called upon to furnish the dealers with information about the financial needs of the state commission for the future. There was



The group of dealers that organized the newly created Kentucky Liquefied Petroleum Gas Association.



R. L. KIPER



L. C. PARKER

some discussion of a recommendation that has been made by the Revenue Code Commission, a body appointed by the state governor for the purpose of studying the taxing statutes and making recommendations for legislation.

A convention date was set for April 7, 1948, at New Orleans. Plans call for a luncheon with speakers, a business section, and a dinner-dance in the evening. Louis Abramson, Jr., Petrolane Corp., New Orleans, was named chairman of the entertainment and program committee, to be assisted by W. J. Leaumont, Southern Heater Co., and John A. Davis, Empire Stove Co., both of New Orleans.

President R. Leslie Kiper, Monroe, and Executive Secretary L. C. Parker, Baton Rouge, will also assist in arranging the program for the annual convention.

NGAA

Heading the program of the Gulf Coast regional meeting of the Natural Gasoline Association of America, P. C. (Dobie) Keith, Hydrocol Corp., New York, presented a discussion of "Gas Synthesis on the Gulf Coast." The meeting was held in the Driscoll hotel, Corpus Christi, Jan. 30.

The discussions were concerned with everyday problems of the plant engineer or chemist, problems that they have already or may meet in the future. This is in keeping with the general plan of the NGAA regional meetings.

AGA

The new coordinator of promotion for the American Gas Association is H. Vinton Potter, formerly director of the association's "New Freedom Gas Kitchen" program. He succeeds Col. John H. White, Jr., whose resignation was effective Dec. 31.

Mr. Potter will coordinate all of the promotional activities on an industry-wide basis under the new organizational procedure instituted with the adoption of the "Promotion, Advertising and Research" plan by the executive board of the AGA.

Colorado

Members of the Colorado LP-Gas Association are organizing district meetings which will supplement the program of the central organization. Already active are district organizations at Loveland and Holyoke.

The Colorado association has also joined the increasing number of state associations who are publishing a regular news bulletin. These bulletins serve to keep members informed of events and help the district groups notify their membership of impending meetings.

Carl C. Bauer, Tri-County Skelgas, Loveland, has been elected president of the Tri-County district, and E. L. Scott was chairman of the second district meeting in the Holyoke area, called the Northeast district of the Colorado association. Most of the sectional meetings are monthly.

The accepted program of the state

association is broken down into 10 points. They are:

1. To avoid adverse state and local legislation.
2. To avoid adverse publicity.
3. To combat unfair competition.
4. To secure insurance at moderate rates.
5. To plan and promote favorable advertising programs.
6. To keep off the market unapproved equipment.
7. To establish fair trade practices.
8. To encourage enforcement of rules and regulations.
9. To improve customer service.
10. To analyze the economics to bring about a fair return on your investment.

In connection with its promotion program, the Colorado association has devised an emblem. It will be supplied to members in the form of gummed stickers which may be displayed on door and window glass.

A spring state convention is being contemplated by the association officers. Members are being queried for their views upon time and place for this meeting.

NBPA

Already the National Butane-Propane Association is laying its plans for its third annual convention and trade show which will be held at the Congress hotel in Chicago next Sept. 20-22.

Of special interest to prospective exhibitors is the announcement from E. E. Hadlick, executive vice president, that those firms which exhibited last year in St. Louis are given first choices for booth spaces for the 1948 show.

The space remaining unbooked as of March 15 will be offered to the

general exhibiting group. No exhibit space will be sold except to those who are members of the association and when all of the presently allotted space has been contracted for no more will be added.

Of course, this means that those planning to exhibit in Chicago should get in their reservations early.

Among many resolutions passed by NBPA board of directors in Chicago, on Dec. 13, was one recommended by the safe practices committee, headed by R. J. Coughlin, Westland Oil Co., Minot, N. D., which recommends that cylinder testing be eliminated altogether. The resolution follows:

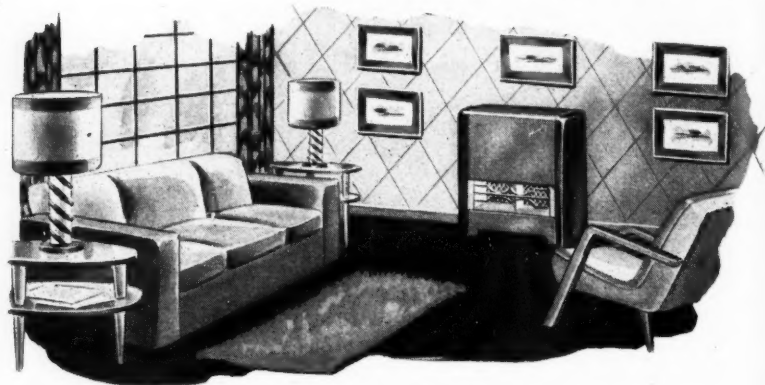
"That we commend the Interstate Commerce Commission for its action during the past year in extending the required testing period on ICC-4B cylinders from 5 to 10 years, and that we urge said Interstate Commerce Commission to give further study to the matter and to consider complete elimination of this periodic testing which we believe places an unnecessary burden on the industry without benefit or protection of any kind to the public."



R. J. COUGHLIN

Addressed to officials who have jurisdiction over regulation of the LP-Gas industry, Regulatory Bulletin No. 1 of a series that will be prepared by the National Butane-Propane Association has been issued. Copies of each issue will also be sent to secretaries of state associations in the field,

THE BEAUTIFUL NEW 1948 HUMPHREY RADIANTFIRE *Circulator*



Clean 2 Way Heat . . . Modern Design

The new 1948 Humphrey Radiantfire Circulator brings a new standard of beauty to the circulating heater field. Finished in smooth opalescent brown with just enough chrome trim for proper accent, it harmonizes with any type of furnishings and adds to the appearance of any room.

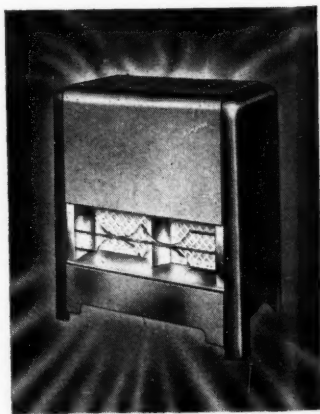
In performance too, the 1948 Humphrey Radiantfire Circulator leads the field. Sun-like radiant heat pours through the open front to warm the floor and lower levels of the room while warm air circulates through the grille on top carrying heat and comfort into every corner.

For the newest in style and the top in performance, Humphrey is the heater for 1948.

**GENERAL
GAS LIGHT
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according to Elwin E. Hadlick, executive vice president of the association.

Purpose of the bulletin is to provide a medium through which information on LP-Gas regulations may be exchanged among regulatory officials interested in expressing their ideas and asking questions among others in positions similar to theirs.

In connection with the regulatory bulletin, the NBPA is also compiling information on all of the laws and regulations relating to the industry in both the United States and Canada. Frank and open comments are requested on the contemplated publication, which will be loose-leaf and subject to changes and new developments in laws and regulations.

One of the purposes behind the publication of this compilation of laws is to assist in bringing about the successful execution of a resolution recognizing the value in making regulations based upon Pamphlet No. 58, adopted by the NBPA board of directors Dec. 13. That resolution is, in effect:

National Butane-Propane Association recognizes "as a basic text the latest edition of Pamphlet No. 58, being the recommendations of the National Fire Protection Association and the standards adopted by the National Board of Fire Underwriters for the design, installation, and construction of containers and pertinent equipment for the storage and handling of butane and propane gases," and urges "all regulatory officials to give consideration to the provisions of such pamphlet when they find it necessary or desirable to adopt regulations and to conform their regulations as completely as may be possible to those of said pamphlet."

It is not anticipated that the publication of all laws and regulations will be completed before spring. There will also be no definite publication schedule for the regulatory bulletins. They will be issued by the association whenever there is enough material to be disseminated among officials and state association secretaries.

CALENDAR

All LP-Gas state, national, and other associations are invited to send in dates of their forthcoming meetings for this calendar.—Editor.

Feb. 10-11—Kentucky Petroleum Marketers Association. Brown Hotel, Louisville.

Feb. 16—New Jersey LP-Gas Association. Far Hills Inn. Somerville.

Feb. 23-27—University of Kansas Service School. Wichita. Sponsored by Kansas LPGA.

March 24-25—National Butane-Propane Association Board of Directors. Jefferson Hotel. St. Louis.

March 24-26—Natural Gasoline Association of America. Texas Hotel, Fort Worth.

April 1-2—LPGA North Central District. Sherman Hotel. Chicago.

April 5—Council of LP-Gas Associations. Atlanta, Ga.

April 5-6—Liquefied Petroleum Gas Association Board of Directors. Statler Hotel. Washington, D. C.

April 5-7—Gas Appliance Manufacturers Association. Drake Hotel. Chicago.

April 7—Louisiana Butane Dealers Association. New Orleans.

April 12-13—Florida Liquefied Petroleum Gas Association. Sheraton Hotel. Daytona Beach.

April 19-20—Florida LP-Gas Association. Spring Conference. Daytona Beach.

May 10-13—National Fire Protection Association. Hotel Statler, Washington, D. C.

June 1-6—Liquefied Petroleum Gas Association Annual Convention and International Trade Show. State Fair Grounds, Sacramento, Calif.

June 13-16—Texas Butane Dealers Association, San Antonio.

Sept. 16-19—National Petroleum Association. Atlantic City, N. J.

Sept. 20-22—National Butane-Propane Association, National Convention and Trade Show. Congress Hotel, Chicago.

Oct. 4—AGA Convention and GAMA Exhibition. Atlantic City, N. J.

Will Carry Convention Story Directly to the Dealers

Interest is becoming widespread in the International Trade Show to be held in Sacramento, Calif., June 3-6 and which will be preceded on June 1-3 by the regular national convention of the Liquefied Petroleum Gas Association. The trade show will be open to the general public as contrasted to the convention for dealers and distributors.

Much exhibit space has already been reserved by manufacturers throughout the country and special trains are being planned by industry members from New York, Chicago and New Orleans.

An unique method to acquaint West Coast dealers with the nature of this program has been started by Director Bob Johnson and LPGA West Coast Secretary Don McNary. On



BOB JOHNSON



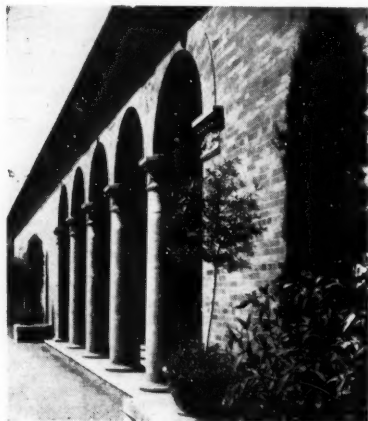
DON McNARY

Jan. 26, starting in Stockton, Calif., they began a personal tour of California, Arizona, and part of Mexico, during which they will personally call upon scores of dealers to explain the scope of the show and to interest them in attending. Among the towns where special meetings will be held, in addition to Stockton, are San Jose, San Luis Obispo, Bakersfield, Los Angeles, San Bernardino, Long Beach, San Diego, Tulare, Fresno and Marysville, all in California, and TiaJuana and Mexicali in Baja California.

LPGA

The LPGA board of directors will next meet at the Statler hotel, Washington, D. C., April 5-6. This is in keeping with the plan to shift the place of meeting from various areas of the country to simplify attendance for the members on at least one occasion in the year. Non-board members of the association are also welcomed to the meeting.

A proposal to include West Virginia and Virginia in the North Eastern Section of the LPGA is also before the board. The motion was referred to the LPGA board of directors at the November meeting of the Section.



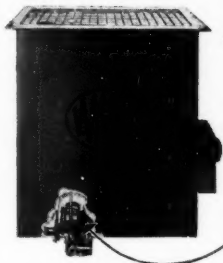
Machinery Hall, California state fair grounds at Sacramento, where exhibits will be housed at the LPGA convention next June.



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Another "sales feature" of the Ward that makes for efficient performance . . . that helps the furnace to

deliver maximum heat while keeping gas bills low.

This burner is of the Bunsen type. It is constructed of heavy cast iron, with raised slotted ports. Deep valleys permit a liberal entrainment of secondary air. Burns with a steady blue flame and is noiseless and self cleaning.



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- Copper Nipple Outlet
- Insulated Outer Shell
- Sealed Lighter Door
- Vent Tube Collar

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1800 West Washington Blvd. • Los Angeles 7, California

GAS has got it!



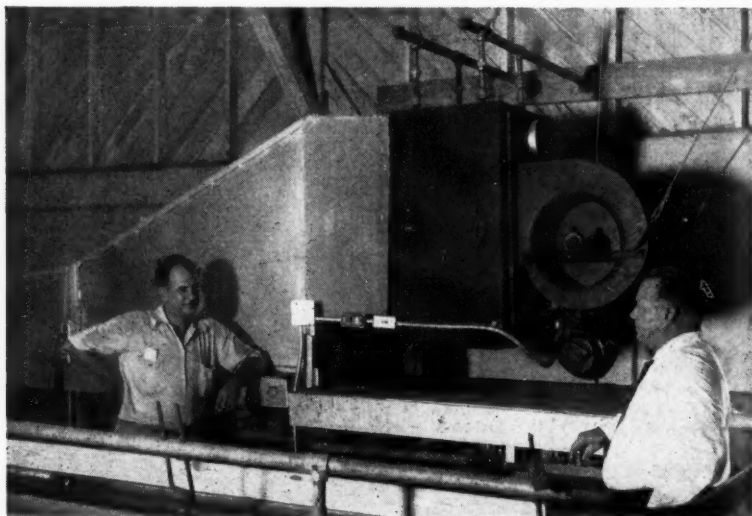
Fruit Drying Operation With LP-Gas Increases Output 30%

A gas-fired, fruit-drying apparatus installed in a local nursery is among the load-balancing customers serviced by the Lake County Fuel Co., with home offices in Mount Dora, Fla.

Owned and operated by R. C. Bardwell and Mrs. Bardwell, Lake County Fuel Co. provides the fuel for a Reznor blower heater which assists in the packing house operations of the Ocklawaha Nurseries Inc., Lake Jem, Fla. Installed in November, 1945, the dryer has eliminated "down time" due previously to cold and damp days during the packing season and has permitted at least 30% increase in packing operations.

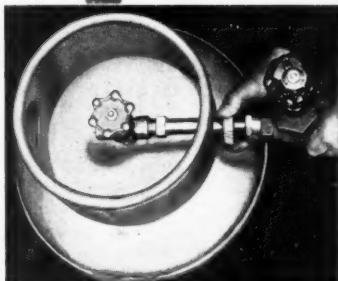
O. W. Connor, manager of the Ocklawaha Nurseries, is warm with praise for the efficiency of the drying machine and the Lake County Fuel Co., which maintains a 60,000-gal. storage tank at Tavares, Fla. The LP-Gas used in the firm's operations is supplied by Green's Fuel of Florida.

Founded in November, 1936, Lake County Fuel is now operating two service trucks and two delivery trucks. Wherever Mr. Bardwell finds packing houses not large enough to warrant steam boiler installation, he attempts to sell an LP-Gas-fired drying unit. Additional equipment necessary to the citrus drying operation is a sheet metal "boot" which directs the air flow over the fruit after it has been waxed.



Installation of a Reznor blower type heater in the Ocklawaha nurseries at Little Jem, Fla., by Lake County Fuel Co., of Mount Dora, Fla. Shown are R. C. Bardwell, dealer, and O. W. Connor, nursery manager.

ANOTHER *Selwyn-Landers* FIRST



By projecting "Speedring" extension adaptor through tank fitting guard, the operator safely and quickly makes the connection.



**SEND FOR NEW S-L
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S-L "SPEEDRING" EXTENSION ADAPTORS

ARE LIGHT, FAST AND SAFE TO USE

S-L "Speedring" Extension Adaptors are faster and safer to use. Easily attached to filler, vapor return or POL valves, the long extension permits fast easy handling approximately six inches away from connection, thereby preventing "hand burns". Simply give the "Speedring" a twirl and connection is made. No tools required.

Send for NEW Selwyn-Landers Adaptor and Coupling Catalog. All S-L Adaptors and Couplings including the "Speedring" for either POL or Acme connections are illustrated. With catalog is included price list covering the complete line of LP-Gas equipment being manufactured by Selwyn-Landers.

SELWYN-LANDERS COMPANY

4709 East Washington Blvd., Los Angeles 77, Calif.
Designers and Manufacturers of L. P. G. Equipment

NEW PRODUCTS

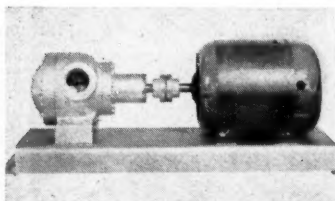
LP-Gas Pump With Self-Adjusting Packing

Smith Precision Products Co., 1135
Mission St., South Pasadena, Calif.

Model: MC-2.

Application: For liquid transfer of butane and propane.

Description: This pump is one of a new series designed to eliminate service problems. This is accomplished



through an automatic, self-adjusting packing assembly. It does not require any servicing nor the application of lubricants of any kind.

The manufacturer believes this new feature is one of the most important advances in butane and propane pump engineering, since in this service, packing must hold pressure 24 hours a day, whether the pump is in use or not. By eliminating the need for service attention in lubrication and packing adjustment, a considerable amount of service time is saved, in addition to avoiding a possible fire hazard, and loss of product from unchecked leaks.

The new series is available for sta-

tionary installation (MC models) with electric motor drives, and for tank truck mounting (TC models) with power take-off drive.

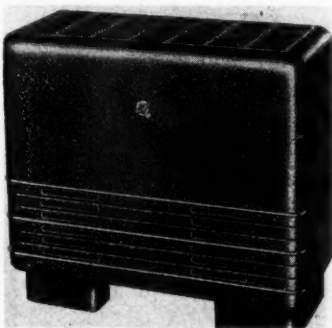
Circulating Heater

Peerless Manufacturing Corp.,
Louisville, Ky.

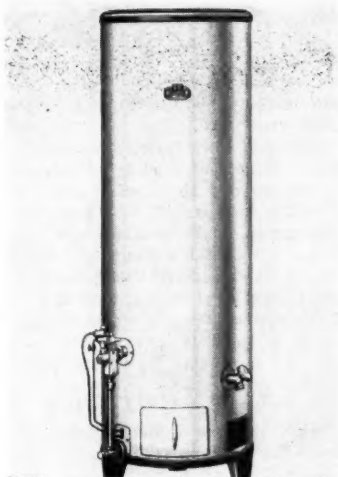
Model: 1948.

Description: Designed for use on all gases and fully AGA-approved, these circulating heaters will be produced in four sizes and two designs, ranging in Btu input from 20,000 to 60,000. The two designs, one with plain front styling and the other with radiant front styling with radiants fully enclosed and sealed, will be available early this year. This feature combines radiant heat performance with circulating heat.

With a choice of manual or automatic control, the heaters will be finished in dark crystallized brown with chrome trim.



BUTANE-PROPANE News



Water Heater

Clayton & Lambert Manufacturing Co., 1731 Dixie Highway, Louisville 10, Ky.

Application: For domestic, high-recovery water heating with LP-Gases.

Description: The water heater is of external flue construction, fully insulated with fiber glass, heavy steel, and a hot-dipped galvanized tank. It has an input of 30,000 Btu's designed to give a recovery of 42 gals. per hour, with a 60° rise in temperature. Electro-magnetic controls, with a 100% safety pilot cut-off, are used.

The exterior finish is white enamel on a steel jacket, with black and chrome trim. The complete Clayton & Lambert line includes gas-fired models for natural, mixed, manufactured and LP-Gases in capacities from 20 to 52 gals.

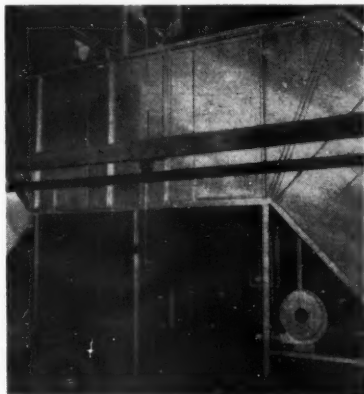
Rust-Proofing

Burdett Manufacturing Co., 3433 W. Madison St., Chicago.

Description: After development of the Burdett infra-red gas-fired burners a few years ago, continued research made it apparent that degreasing could also be accomplished with infra-red and with greater thoroughness and speed than with liquid types of degreasers, according to the manufacturer, and this part of the unit was developed.

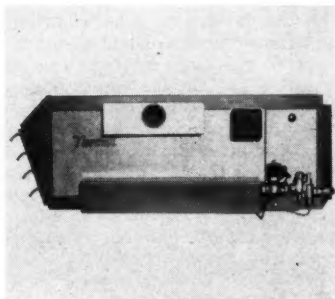
Further investigation has shown that the burn-off process could be made to produce a rust-inhibiting surface. And, according to the company's findings, this process is comparable to practically all existing rustproofing methods. One advantage in this new development is that degreasing and rustproofing are done simultaneously with savings in time, labor and equipment. The entire operation requires approximately five minutes.

The proper placing of the gas-fired infra-red burners in relation to the work, as determined by scientific standards, is the process by which the burn-off rust-proofing process oper-



ates. The rust-proof surface presented is explained as a tight scale and is said to reach hidden surfaces that are not ordinarily reached by rust resistant liquids.

Sheets treated by this process have been successfully tested under severe weather conditions and in acid atmospheres. Paint adhesion is claimed to be equal to that on surfaces treated with other rust preventives.



Unit Heater

Norman Products Co., 1150 Chesapeake Ave., Columbus 12, Ohio.

Model: Southerner

Application: For heating garages, warehouses, offices, factories, service stations and other types of spot heating installations.

Description: This self-contained unit heater is available with 30°, 45°, 90°, or splitter nozzles for easy and inexpensive suspension from the ceiling. The nozzle spreads large volumes of heated air downward to the floor with no transmission heat loss and distributes it evenly over the working area, making it efficient and economical to expand the area indefinitely by installing additional heaters.

When the thermostat calls for heat, a fan control, perfected by Norman

engineers, prevents the fan from starting until the heat exchanger is hot enough to deliver warm air. This fan control eliminates "cold blast" and is standard equipment on the Southerner.

The cold air return connection permits a return air duct to be connected to the rear of the heater and taken to within 12 in. of the floor level. Through this duct, return air is drawn to the unit, which improves circulation and reduces stratification of cold air at that level, it is reported.

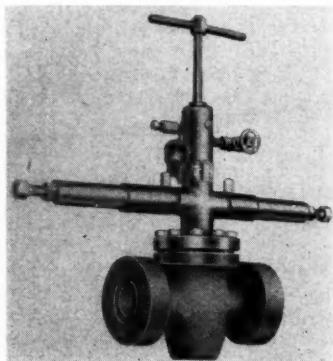
The dimensions of the heater: 13 in. x 16½ in. x 40 in.

Surface Safety Valve

Otis Pressure Control, Inc., P. O. Box 7206, Dallas, Texas.

Application: Designed to prevent line breaks caused by excessive pressure increase or to shut off a broken line.

Description: This safety valve is self-contained, pressure-operated with full opening gate which automatically closes whenever operating pressure goes above or below that for which the valve is set. Operating pressure



can be supplied by the line in which the safety valve is installed, or it can be furnished through a connection to an outside source. When the valve is operated by line pressure, all connections are within the valve itself. When an external source of operating pressure is used, it is connected directly into the operating cylinder of the safety valve. Operation is identical, regardless of the source of pressure and no electrical or remote control mechanisms are required.

Conventional design is applied throughout the valves and they are available in several types and in any standard size and test pressure. The bonnet and stem assembly are specifically designed and manufactured to provide a positive automatic closing safety valve for use in well connections, flow lines, and transmission lines.

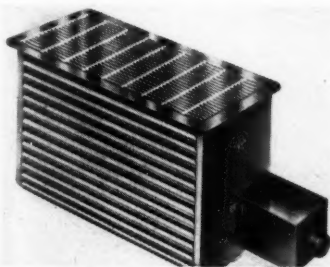
Floor Furnace

Rheem Manufacturing Co., 570 Lexington Ave., New York.

Model: 1600 Series.

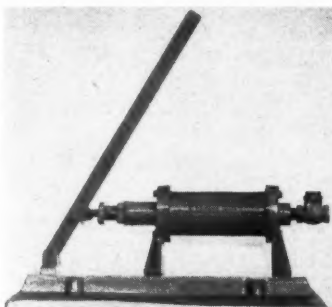
Application: Domestic furnace.

Description: Burning natural, manufactured, mixed or LP-Gas, this heater is available as a flat register, standard dual wall, or space-saver wall



type, operating either manually or automatically.

A specially developed burner gives great heating efficiency by providing each gas port with maximum air intake area. Extinguishment of burner and continuance of normal up-drafts are provided for by a down draft diverter, while scientifically placed baffles inside the heating elements slow the escape of hot gases until all usable heat is exhausted. The heating elements are made of die-formed steel. The corrugations of the galvanized casing absorb contraction and expansion.



Hand Pump

D. H. Krug, 918 West Center St., Madison, South Dakota.

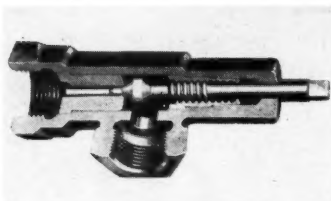
Model: Piston-Type Hand Pump.

Application: Applicable for both tank filling and bottle filling where bottle filling does not require large-scale operations. Also suitable for filling fuel tanks on farm tractors and trucks.

Description: This pump, which can be used as standby when power pump fails, according to the manufacturer, is equipped with 1-in. inlet; $\frac{3}{4}$ -in. outlet; with the base 8 in. by 24 in. Weighing approximately 50 lbs., the

pump has a cylinder made of cast iron and is 9 in. long.

The stroke is $4\frac{1}{2}$ in. by $3\frac{3}{4}$ in. bore. Piston displacement per stroke is more than 34 cu. in. Gases can flow freely through pump without manual operation when pressure in tank to be filled is less than the pressure in tank from which fuel is drawn until pressure is equalized. The pump has one automotive type valve in the piston and one high pressure swing check valve.



High-Pressure Valve

Welsbach Corp., Kitson Div., Philadelphia.

Model: G-452 H.P.

Application: For use on medium and high pressure service lines just ahead of the gas regulator and designed for gas service up to 150 lb.

Description: This is a tamper-proof, non-lubricating brass valve. It is free from tampering in that the entire valve must be removed from the line before interference is possible. The staked-in assembly of component parts is made through the inlet pipe connection, having no gland, bonnet, or other parts which could be loosened or removed while in service. Metal-to-metal seating is provided for in both the open and shut positions. The upper part of the stem has a milled square for application to any specified type of handle.

The valve is available in 1-in. inlet by $\frac{3}{4}$ -in. outlet size, and with $\frac{3}{4}$ in. by 1 in. brass adaptors for the inlet, although the company recommends standard steel bushings.

Vent Cap

Hammel Radiator Engineering Co., 3376 Motor Ave., Los Angeles.

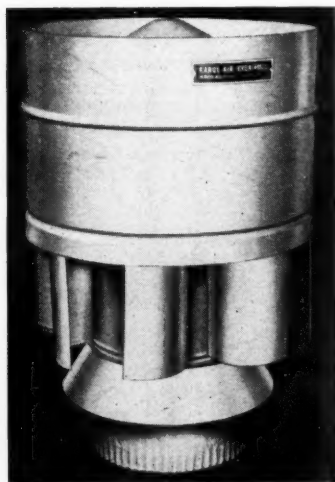
Model: Karol-Air-Even-Pull.

Application: Vent cap for burner installations.

Description: Patented vent cap is used with oil or gas burner installations in place of the old A-frame vent pipe. It follows time-proven aerodynamic principles which induce maximum flow of air through flue under all conditions of air movement.

This cap is set low on roof and eliminates unsightly silhouette making possible a more attractive roof line.

The special design maintains a con-



stant pull, regardless of unusual draft conditions or high winds. This assures the best possible performance of any vented heater or furnace. Installation is simple.

The "Karol-Air" design features four sets of curved exterior air baffles which break up air pressures and neutralize high velocity winds by receiving a uniform and constant volume of air. The vent cap is so designed as to create an even up draft which exerts a constant pull on gases to be exhausted through vent pipe. Down drafts are eliminated.

This new sheet metal cap has been rigidly tested by the Board of Building and Safety, City of Los Angeles.

Trip-Proof Coupling

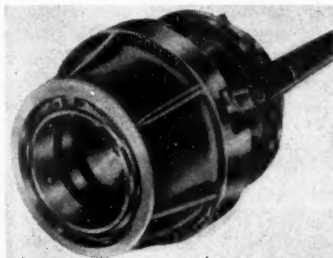
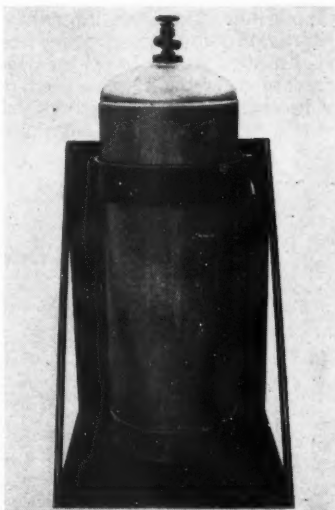
Roylyn, Inc., 718 W. Wilson Ave., Glendale 3, Calif.

Application: Designed especially for handling petroleum products, chemicals and other products where spillage is not permissible or desirable.

Description: The coupling provides a positive shut-off valve in the same assembly of a Roylyn quick coupling by meshing a valve lever with the locking collar of the coupling. The valve must be in the shut-off position before the coupling can be broken and, conversely, the coupling must

be locked in its mating nipple before the valve can be opened.

Made of non-sparking, bronze alloy and weighing 11½ lb., the piston-type valve effects a seal even with static pressure. The coupling is available now in 2½ in pipe thread sizes with larger units contemplated by the manufacturer. It requires only a 40° rotation to activate it and is easily operated, positive, vibration-proof, and requires no tools, according to the manufacturer.



Cylinder Vise

Testing Equipment Co., P.O. Box 5061, Chicago.

Application: For use in filling plants to facilitate insertion, removal or repair of cylinder valves.

Description: This device is designed so that it is adaptable not only for

standard 100-pound cylinders with a nominal 15 in. diameter, but also by means of a special insert feature, it can be used for 20, 25, 40 or 60-pound cylinders with a nominal 12 in. diameter. All gripping surfaces are faced with brake lining to eliminate any marring of cylinders.

Central Heating Plant

Hook & Ackerman, Inc., 18 E. 41st St., New York 17.

Model: No. 2- $\frac{1}{2}$ HW3 and No. 2- $\frac{1}{2}$ HW5.

Application: These two larger sized Hydrotherm automatic gas fired central heating plants have been designed to meet the current need for the heating of large residences, and for volume water heating for apart-

ment houses, hotels, laundries, industrial and commercial buildings.

Description: Varying from 600 sq. ft. installed radiation capacity to 1000 sq. ft. installed radiation capacity, the units have received full AGA approval for use on LP-Gases, manufactured, natural and mixed gases.

All Hydrotherm models feature the patented horizontal heat exchanger that makes the units compact and efficient. The units occupy less space than a modern washing machine and are particularly suitable for use on modern convector and radiant heating systems, according to the manufacturer.

For easy handling and installation by one man, the absorption unit, boiler base with burner and control, and the jacket, are delivered knocked down.



Catalogs

Flow Indicator

A folder, No. 18W, carries catalog information on flow indicators, which are distributed by the Alan W. Bowser Co., 1816 Cockrell St., Dallas, Texas. The indicators are manufactured by Schutte & Koerting Co., Philadelphia.

The four-page bulletin which illustrates and gives specifications on the rotary, flapper, and distillate type flow indicators, together with pictured applications of the various indicators, is available to interested parties upon request from the Bowser company.

Appliances

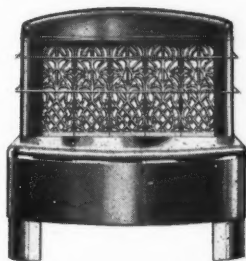
Two bulletins, one setting forth the sales pointers for the Brentwood automatic storage water heaters and one

Hearth Glo GAS HEATERS

are making warm friends because they're such
RED HOT VALUES!

We've put almost 60 years of experience and reputation into *Hearth Glo* Gas Heaters. Users recognize and appreciate the added value the minute they see a *Hearth Glo*.

It's the best looking, best performing, longest lasting Gas Heater they can buy for the money! YOU profit more because of the enthusiasm created by the superior quality built into this fine product.



Ask your Jobber about *Hearth Glo* GAS HEATERS

JACKES-EVANS MFG. CO. • ST. LOUIS

on the Brentwood floor furnaces have been prepared by National Appliances, Inc. 260 Shady Ave., Pittsburgh, Pa.

Much valuable information is presented in the bulletins concerning the proper size selection, specifications, and installation instructions. Three pages of questions which are likely to be asked after the water heating equipment is installed, together with the answers, have been compiled to aid dealers.

In the floor furnace bulletin a heat-loss survey report is presented with an attached house heating report for the dealer to fill out.

Carburetion Manual

The Dix Manufacturing Co., 3447 E. Pico Blvd., Los Angeles, Calif., is now distributing a new catalog manual on a new Dix LP-Gas carburetion unit.

This catalog and instruction manual is available to anyone in the industry who desires the information it contains. Address the company.

The new manual includes information covering the advantages derived from using butane or propane as a motor fuel, a full presentation of the Dix carburetion line, plus complete installation instructions and parts manual.

Range Burners

A bulletin setting forth the application of its gas range burners is now available to readers from the Holyoke Heater Corp., 54 Waltham Ave., Springfield, Mass. It contains an installation sheet for the No. 65 range burner and both parts may be inserted in a loose-leaf binder.

The bulletin contains information on the burner, the burner head, pilot,

motor valve, secondary air, adjustable orifice, and control system. Two types are illustrated, one for rectangular boilers and the other for round boilers. The gas burner can be used for cooking or heating with all types of gas and in any stove, according to the manufacturer.

Fittings

The S. H. Leggitt Co., Marshall, Mich., has recently issued a series of brochures consisting of a connector bulletin, filter price list, installation leaflet and current tubing price schedule.

The connector bulletin is a four-page piece illustrating the company's connectors which are AGA certified for use with gas ranges, refrigerators, radiant and other space heaters, floor furnaces, and water heaters. Complete specifications for these connectors are given.

A single-page leaflet gives instructions for installation of Leggitt filters, range connectors, and fittings.

A price sheet is also available on the company's tubing which is applicable for automotive, refrigeration, LP-Gas, oil and water specifications.

All of these catalogs and lists are available by writing to the company at 325 High St., Marshall, Mich.

Hemispherical Heads

A bulletin put out by the Commercial Shearing & Stamping Co., Youngstown, Ohio, manufacturers of pressed metal products and hydraulic hoist equipment, is now available by writing to the company.

Hemispherical heads for storage tanks, floats, buoys, and unfired pressure vessels are described in detail with specifications and blue print illustrations.

The finest that money can buy!

AMERICAN-Standard HEATING EQUIPMENT

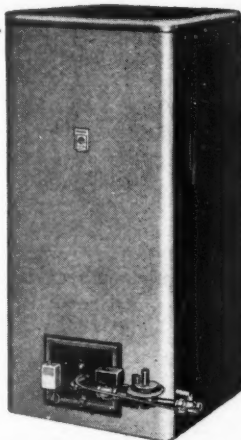
BACKED by research, engineering, and production facilities that are second to none, American-Standard Heating Equipment for liquefied petroleum gas is as fine as money can buy. The smart design and advanced construction features of these heating units make them easy to sell . . . and their sturdy,

durable construction, plus their efficient performance and economical operation, assure lasting customer satisfaction. For details of the complete American-Standard line, contact your Wholesale Distributor. **American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pennsylvania.**



SHAWNEE Warm Air Furnace — A compact gravity furnace with attractive jacket finished in Placid Two-Tone Blue. Radiator and copper bearing steel heating element provide long fire travel and large heating surface. Integral plenum chamber facilitates installation. Comes in 3 sizes, ranging from 60,000 to 120,000 Btu input per hour.

BUDGET Automatic Storage Water Heater—Has fuel-saving cast iron blue flame burner and safety controls. Center flue with spiral baffle insures quick recovery. Mineral wool insulation between heavy galvanized steel tank and trim jacket prevents heat loss, increases efficiency. Comes in 3 sizes, with 20, 30, and 40 gallon capacities.



See our Announcement in the 1948 Butane-Propane News Catalog.



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First in Heating and Plumbing

LOOK FOR THIS MARK OF MERIT — It identifies the world's largest line of Heating and Plumbing Products for every use. . . Including Boilers, Warm Air Furnaces, Winter Air Conditioners, for all fuels—Water Heaters—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim — and specialized products for Hospitals, Hotels, Schools, Ships, and Railroads.

POWER



Safe Practices in Motor Fuel Use

IN considering safety factors of LP-Gas (butane-propane) for engine use one might logically draw a comparison with gasoline. Butane-propane as compared to gasoline requires practically the same precautions in handling.

When filling a gasoline tank, for example, from a dispenser or storage supply, smoking is prohibited as a safeguard against fire. The same safeguard applies to butane-propane. Tanks must be rigidly supported and fuel lines from the tank carburetion equipment must be maintained in leak-proof condition. These are ordinary precau-

By **ROY MYLANDER**
Field Engineer, Ensign Carburetor Co.,
Los Angeles

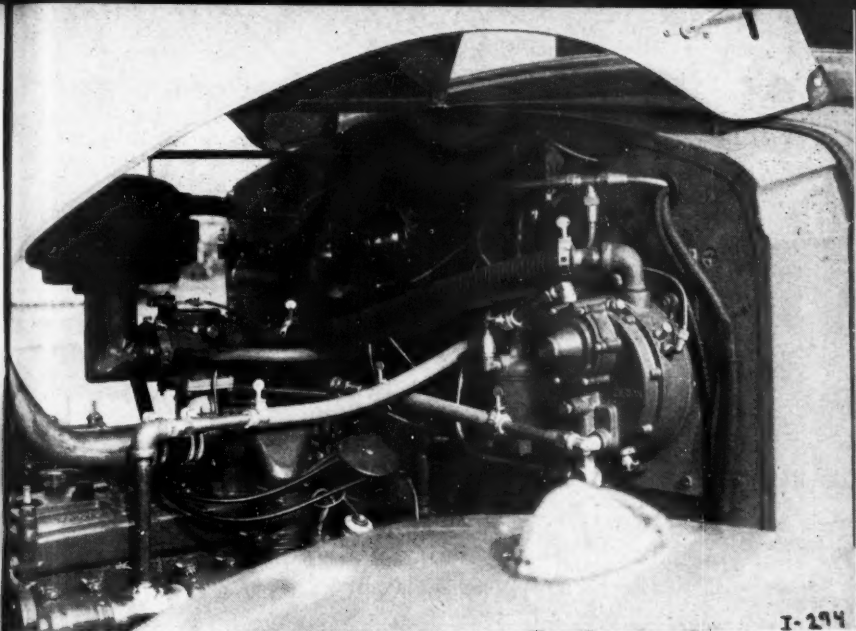
tions for both gasoline and butane-propane.

Since LP-Gas is a relatively new fuel for internal combustion engines and its high pressure characteristics not generally known, we should like to mention herein a few safety points as follows:

1. Don't fill LP-Gas tanks, automotive, domestic or storage, in the presence of lighted-cigarettes or open



Heavy duty, butane-fueled engine on highway.



I-294

Ensign standard model R vaporizer and Kg-1 1 $\frac{3}{4}$ " butane-propane carburetor on White 125-hp engine in Model 26-A, 4-5 yard rear dump truck.

flames. Always shut off engine of vehicle before filling fuel tanks.

2. When installing a butane-propane vaporizing unit it is preferable to mount it on the bulkhead of the chassis rather than on to the engine. This prevents weaving of vaporizer with relation to vehicle body.

3. With bulkhead or engine-mounted vaporizers on mobile installations it is always advisable to use a length of high pressure flexible line next to the vaporizer. Nearly all manufacturers of flexible fuel lines make a high pressure line especially for butane-propane.

4. When servicing the butane-propane vaporizer, regulator or carburetor be sure fuel is first shut off in the following manner:

A. Shut off tank value tightly.

B. Break line connection at vaporizer by first loosening fitting nut slightly. Allow liquid fuel entrained between tank valve and vaporizer to escape or blow off around threads of loosened nut before completely unscrewing the nut or fitting.

5. It is preferable, prior to servicing engine or carburetor equipment, to shut off liquid fuel valve at tank and run engine until it dies for lack of fuel. This will bleed lines completely.

6. When servicing work is completed and engine ready to start, turn on the liquid fuel gradually. Do this with a series of short quick openings and closings of the tank hand valve.

This allows pressure within the system to equalize gradually, thereby preventing rupture of regulator or vaporizer parts. Also, this valve opening procedure makes possible easy detection of leaks which frequently show up in newly installed lines and assembled fittings. Sizable leaks are easily detected by the sound of escaping gas or by odor of the fuel. All LP-Gases are odorized at the refinery to facilitate safe handling. Use soap and water to make final check on repaired leak.

7. It is never advisable to start an engine when the evidence of butane-propane odors is present.

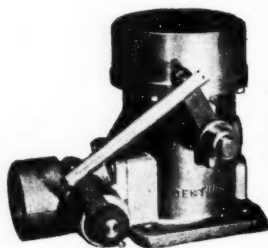
8. Fuel tanks are heavy and must be supported by strong saddle brackets. When installing tanks on vehicles, locate them in a position so that fittings and fitting guards are not easily knocked off by passing

vehicles. Guard carefully the fuel lines to the engine. Keep them well away from open areas. Keep them protected behind frame channels, gussets and other solid members.

9. Shut off fuel whenever vehicle is stored for long periods.

Generally speaking, butane-propane installations on vehicles and stationary internal combustion engines are very much improved over those of 5 to 10 years ago. Safeguards mentioned herein are nothing more than using good judgment. LP-Gas offers few, if any more hazards than gasoline.

With new and modern equipment for safer transportation, dispensing and utilization, LP-Gas is gaining widespread acceptance throughout the world as one of the finest fuels.



3C CARBURETOR
for Liquefied Petroleum Gas

CENTURY

At right: MODEL M
CONVERTER.
Weight: 4½ lbs.
Diameter: 6 in.
Working parts easily accessible. High pressure valve removable from outside of case. Capacity up to 200 h.p.



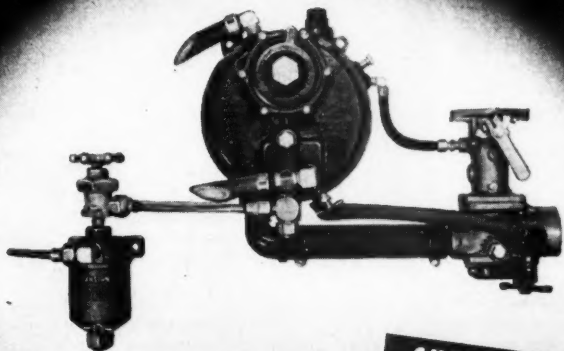
CENTURY GAS EQUIPMENT COMPANY

11188 Long Beach Blvd.

Lynwood, California

Oldest Manufacturers of LP-Gas Carburetion

ENSIGN the most widely accepted Carburetion Equipment for L.P.G.



TRUCKS • TRACTORS • BUSES

Successful engine operation on Butane-Propane depends largely upon the carburetion and its method of application. The Ensign model "R" Butane Regulating Unit in conjunction with Ensign Carburetors assures you the best **BALANCED CARBURETION** available today.

Specify Ensign for your engine conversions. Protect yourself and your customers with proven equipment—carburetion built by specialists with over 36 years carburetion experience.

CHECK THESE BENEFITS

- ✓ Easy Starting
- ✓ Fast Acceleration
- ✓ Full Power
- ✓ Maximum Economy
- ✓ Easy to Install
and Service
- ✓ Thousands In Use

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BRANCH FACTORY: 2330 WEST 38th STREET, CHICAGO 36, ILLINOIS

"Pioneers in Efficient Carburetion" • Established 1911

Cyr Bottled Gas Co. Installs 30,000-Gal. Gas Storage Tank

By RAY FREEDMAN

The addition of a 30,000-gallon propane gas storage tank has been recently installed on Lake Shore Blvd. by the Cyr Bottled Gas Co. in Marquette, Mich.

Organized in 1936 by Earl and Ray St. Cyr, the company has shown marked growth. On the basis of reports, the firm supplies gas to approximately 6000 customers, 1500 of which is retail trade and the 4500 balance through certified wholesale accounts.

The new tank, 63 feet long and 9 feet in diameter, is the maximum in size for code tanks in the United

States. Together with the 15,000-gallon tank already in use, the company will have a total storage for 45,000 gallons.

It is stated that it will take four to eight 10,000-gallon carloads of gas a month to keep the tanks filled and customers supplied adequately. According to Earl St. Cyr, the company will service both Marquette and nearby Alger county residents.

The large tank was delivered to its present site via the Chicago & Northwestern and Lake Superior & Ishpeming railroads. It was installed on the southeast corner of the company's property.

In discussing the new storage facilities for propane gas, Mr. St. Cyr says the new tank will afford sufficient storage to care for a rapidly expanding heat and cooking demand for the product.

Mr. St. Cyr states that he has had a large waiting list, several hundred people, in fact, seeking propane gas installations. The company, however, is allotted but a limited number of cylinders each month and by priority



EARL ST. CYR



Office, display room, and bottle filling plant of Cyr Bottled Gas Co., Marquette, Mich.

...and there's lots more
Hot Water with a
U.S. HEATER!



LP-Gas dealers are interested in the satisfaction derived from use of the water heaters installed by them. An adequately sized United States Water Heater is assurance of an abundance of hot water at all times. She'll never have to climb out of the shower shivering, with her hair half shampooed, if there's a U. S. Heater in her home. Heavy gauge steel tanks are welded electrically into "one piece" units, and are heavily "corrosion proofed" with fused zinc. A snugly fitting blanket of Fiberglas insulation between tank and outer casing stores the heated water. High velocity economical burner with steel venturi tube efficiently recovers the stored heat. Positive control of water temperature by means of snap-action thermostats which are adjustable to varying household needs keeps operating costs low. Safety pilot controls of proven durability and operating efficiency keep the heater safe.

ORDER FROM YOUR WHOLESALER

UNITED STATES HEATER CO.

133 EAST PALMER AVENUE, COMPTON, CALIFORNIA

rating must of necessity look after regular trade and the balance as it "straggles in." The gas is shipped from Texas and Oklahoma in tank cars.

Last year the company moved into new 40x60-foot quarters, and later it was necessary to add a 20x40-foot garage. The entire building is fireproof and equipped with every standard safeguard. In 1946 the tank warehouse was lengthened by a 50-foot addition, making the warehouse 20x82 feet. Moreover, it is the only building in the county heated by propane gas, Mr. St. Cyr said.

Fourteen men are employed by the company in Marquette, and a number elsewhere about the state.

Redding, Calif., Changes Over To Propane-Air Town Plant

THE Pacific Gas & Electric Co. of San Francisco has recently placed in service at Redding, Calif., a completely modern propane-air gas plant, replacing the 550 Btu manufactured

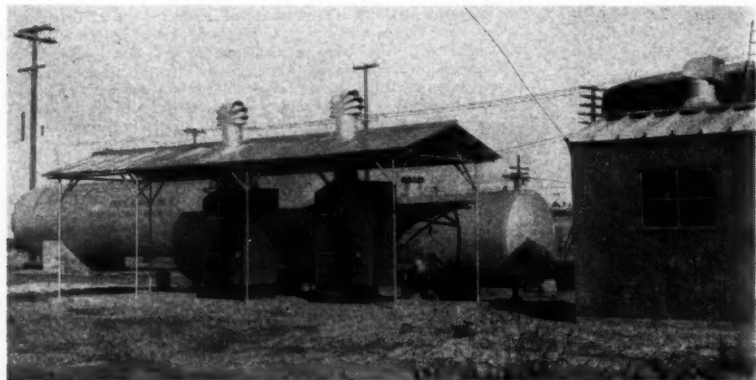
oil gas which had been served in that community for many years.

The propane-air gas has a calorific value of approximately 935 Btu and is adjudged to be much more satisfactory than oil gas.

Site for the new plant is located 400 feet west of the old manufactured gas plant in an open area of about 1½ acres. An old reserve water seal holder of 50,000 cu. ft. capacity, as well as storage and maintenance sheds, were dismantled to create the new site.

The propane-air plant was designed and installed by Pacific Gas Corp. and is equipped to receive propane delivery by either railroad tank car or truck tank. Unloading of liquid is accomplished by means of a vapor differential compressor located in the unloading tower shed. One 30,000 gross gallon propane storage tank is now in use and facilities exist for the addition of another tank when anticipated increased load warrants.

Vaporizing and mixing of the propane is accomplished by the use of two VM-6 Gasair machines, each hav-

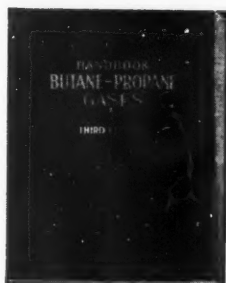


Newly completed propane-air town plant and 30,000 gal. storage tank at Redding, Calif.

HANDBOOK BUTANE-PROPANE GASES

REVISED JUNE, 1947

- Up-to-date technical facts on LP-Gases.
- 352 Pages. Illustrated with Charts, Diagrams and Photographs.



Check this partial list of contents.

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APPENDIX

Products Liability Insurance
Handy Tables for Field Use
The Interchangeability of Other Fuel Gases with Natural Gases
Flame Weeding
Bibliography
Glossary of Terms

THIRD EDITION

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Los Angeles 14, California

ing a capacity of 25,000 c.f.h. All pipe manifolding is arranged for additional Gasair equipment.

Last year a similar plant was constructed and placed in operation by Pacific Gas Corp. at the Grass Valley, Calif., property of P. G. & E., and another PGC propane-air plant is now under construction for P. G. & E. at its Red Bluff, Calif., property.

The three new plants will have replaced the last of existing manufactured oil gas plants for Pacific Gas & Electric Co.

A. E. Bone Given Important Job With Suburban Propane Gas

Arthur E. Bone, of Salisbury, Md., has been appointed assistant to the president of the Suburban Propane Gas Corp., with main offices in Whippany, N. J. This is announced by Mark Anton, corporation president.

Mr. Bone leaves the position as vice president and general manager of the Eastern Shore Gas Corp., a wholly owned Suburban Propane Gas Corp. subsidiary. Since 1936, Mr. Bone has been employed by Philgas Division of Phillips Petroleum Co. in various sales, operating and executive capacities. He has lived for a number of years in several Midwestern states where Phillips Petroleum markets liquefied petroleum gas.

Following his war service, Mr. Bone was a technical adviser of the Phillips Petroleum Co., assigned to Suburban Propane Gas Corp.



A. E. BONE

Safety Edition Scheduled for June

The special issue of BUTANE-PROPANE *News* which will be devoted almost exclusively to the subject of safety in the liquefied petroleum gas industry will be published as the June, 1948, issue.

The preparation of this magazine has already been underway for some time by the editors. It will be devoted to a discussion of safe practices upon every phase of industry activity, all based upon the National Board of Fire Underwriters Pamphlet No. 58. In covering every phase of operation, it will serve as a safety instruction book for dealers and distributors, service and installation men everywhere and will be an important guide book for legislative bodies contemplating the preparation of state laws and city ordinances.

The contents of this June safe practices issue will follow a plan of graphic presentation which proved so effective during the war for education of U.S. Army personnel.

This safety issue will contain approximately 300 pages and extra copies will be sold only on advance orders. The price for extra copies will be \$1 each.

Advance orders for more than 3000 copies have already been received from firms which expect to distribute them to their dealer organizations and to legislators and law enforcing bodies. Subscribers, of course, will receive this issue without additional charge.

Kansas LPGA Moves Offices

The Kansas LP-Gas Association office has been moved from 114 Kaufman building to 207 Kaufman building. Interested parties are invited to drop in and see the new office.

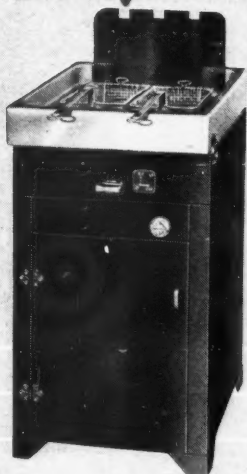
Garland Does It Again!

**Amazing New
Deep Fat Fryer**

**NOW
READY**

Much Faster—More Efficient—

Greater Savings in Fat!



This new Garland fryer gives sensational *speed* and *quick recovery* with a *minimum of grease saturation* in food.

It's improved 14 ways. You get *better heat utilization*, making possible *faster frying* and *more production*. You get *reduced gas consumption*, *reduced cold zone temperature*, *longer life for fat* which means considerable savings in fat costs—many other advantages. Quality-made everywhere. Available with back extension for Garland battery. Available for use with manufactured, natural and L-P gases. Automatic safety pilot furnished as standard equipment when L-P gas is used. Approved by American Gas Association Laboratories.

GARLAND^{*} THE TREND IS TO GAS

FOR ALL
COMMERCIAL COOKING

Heavy Duty Ranges • Restaurant Ranges • Broilers • Deep Fat Fryers • Toasters
Roasting Ovens • Griddles • Counter Griddles

PRODUCTS OF DETROIT-MICHIGAN STOVE CO., DETROIT 31, MICHIGAN

*REG. U. S. PAT. OFF.

THE TRADE



TED WILSON



EARL EVLETH

The Western Gas Equipment Co., with headquarters in Monterey Park, Calif., became the representative of The Bastian-Blessing Co., Chicago, in 10 Western states on Jan. 2. Prior to that time this sales organization represented Bastian-Blessing in part of California, a small portion of Nevada and Arizona.

Western Gas Equipment Co. is headed by Earl Evleth and Ted Wilson. Both of these men have had many years experience in the LP-Gas field and both have been employed by Bastian-Blessing in the past.

The Western states that will be covered under this new plan will include Washington, Oregon, Idaho, Montana, Wyoming, Utah, Nevada, California, Arizona and New Mexico. Representatives from the main office in Southern California will be in regular contact with dealers throughout this area.

A complete stock of Bastian-Blessing equipment will be maintained at

the Los Angeles warehouse for immediate shipment to dealers throughout the West. However, delivery from the Chicago factory will be made to dealers located in areas where shipment from that point will be advantageous.

Beside Mr. Evleth and Mr. Wilson the personnel of the Southern California office includes Paul A. McMinn and Mrs. June Barber.

Carl F. Asendorf, 69, manager for American Meter Co.'s Chicago plant, died at St. Joseph's hospital, Chicago, Jan. 7. Mr. Asendorf was born Oct. 18, 1878, in Baltimore.

Mr. Asendorf started his career in the gas industry in 1895 with the Maryland Meter Works, of Baltimore. He was associated with the American Meter Co. first in Baltimore and since 1902 in Chicago. There he had full charge of factory operations since Jan. 1, 1926.

An interesting new booklet has been prepared by the Brunner Manufacturing Co., Utica, N. Y., covering the subject of LP-Gas liquid transfer by the differential compressor method. Loss of gas vapors when unloading tank cars has long been a problem—and income loss—to distributors of liquefied petroleum gas. With the development of the Brunner transfer unit it is now possible to recover vapors which heretofore have remained in the cars.

The booklet illustrates and explains

the complete operation of the transfer unit, piping, valving, etc., from unloading of tank cars to storage or to tank trucks. It contains many tables of data required by LP-Gas distributors.

A free copy may be obtained by writing to Brunner Manufacturing Co.

Hayliger Church, vice president of **The Weatherhead Co.**, Cleveland, has announced the appointment of **Don R. Fairchild** as advertising manager of the company. He will direct the company's entire advertising program, promotion and display efforts.

In the past few years the company established itself in the liquid petroleum gas field and is now one of the industry's large manufacturers of valves, regulators and fittings for LP-Gas cylinders and tanks for both industrial and household use.

Mr. Fairchild comes to The Weatherhead Company from the **F. C. Russell Company** where he was sales promotion manager.

J. F. Ray, director of sales for **General Controls Co.**, announces several appointments for his company.

Don S. Bentley is named as factory branch manager of the company's Los Angeles branch. He has been with the company for some time as factory sales supervisor and will direct his sales efforts in the following states: Southern California, Arizona, sections of Nevada, New Mexico and

Texas. The Los Angeles branch office serves users of the company's automatic pressure, temperature and flow controls in the above territory.

The factory branch manager of the New York office, located at 101 Park Ave., N.Y., is **F. E. Weldon**. Mr. Weldon has been with the company in the capacity of AGA representative in Cleveland.

C. G. McCarthy becomes the Detroit factory branch manager. Mr. McCarthy's extensive background in the electrical, mechanical and control industry will benefit him greatly in his new position.

E. Carl Sorby, vice president and director, has just announced the appointment of **Norman C. Kreuter** as sales manager and **Pierre Vinet** as director sales promotion of the gas range division of the **Geo. D. Roper Corp.**, Rockford, Ill.

Associated with the company since 1924, Mr. Kreuter has come up through the ranks and has a wealth of experience in all phases of the company's operations. He spent considerable of his early years with Roper in production, production control, order and billing departments. He then transferred to sales and in 1943 was named assistant vice president. In this



D. R. FAIRCHILD



PIERRE VINET



N. C. KREUTER

capacity he was responsible for warehousing, distribution, market analysis, and sales control.

Mr. Vinet has been associated with the Roper Corp. as a member of the Rockford sales department for many years, and in 1941 was appointed assistant vice president. Under his supervision a complete sales control program for sales managers and retail salesmen has been prepared and put to use by many Roper dealers throughout the country. He has conducted many sales training meetings from coast to coast.



E. T. ADAMS

Kerotest and for 12 years has been purchasing agent of the Sinclair Oil Co. in Mexico. Prior to that time, Mr. Adams has been in the Material Department of the Standard Oil Co. of Venezuela.

J. C. Phillips, formerly sales manager of McNamar Boiler and Tank Co., Tulsa, Okla., recently announced his resignation to form the **Allied Equipment Co.**, 1212 North Denver St., Tulsa.

Allied will distribute a complete line of equipment for all LP-Gas dealers, including systems, storage tanks, fittings and appliances for both butane and propane.

Richard O. Montrief, vice president of the **Ward Heater Co.**, Los Angeles, was elected president of the Institute of Gas Heating Industries at a meeting held in Beverly Hills, Dec. 11. He succeeds C. A. Gabriel.

A. B. "Pete" Banowsky of Payne Furnace Co., is the new vice president and Walter Dicus of French Heating Co., the new secretary-treasurer.

The 1948 board of directors will consist of R. D. "Dick" Sutphen, John P. Vein, Harry Haldeman and Mr. Gabriel, retiring president.

The December meeting also featured graduation exercises for over 50 heating equipment installers, who had successfully completed an 8-week educational course sponsored by the Institute in cooperation with the Southern California Gas Company.



R. O. MONTRIEF

Acme Equipment Corp., 313 S. Pearl St., Dallas, Texas, has supplemented its LP-Gas equipment and dealer service by furnishing delivery and transport truck tanks installed on customers' trucks, according to an announcement by Stanley Bent, president of the corporation. These new tanks will be completely equipped in accordance with approved safety requirements, Mr. Bent said.

"A feature of our tanks," Mr. Bent said, "is their adaptation to the customer's own individual needs. When a dealer places his order, we see that the openings in the tanks are arranged to provide for the least restriction to pump, and additional openings are made for external pump by-

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Dearborn!

People forget things—names, slogans,
trade-marks.

*But they don't forget Dearborn
heaters!*

Once a person has seen the Dearborn's
beautiful styling, other heaters look dull
and commonplace.

They don't forget Dearborn.

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air that pours from a Dearborn the instant
it is turned on, other heaters seem old-
fashioned and inefficient.

They don't forget Dearborn.

Once a person has seen how the Saf-T-
Cabinet model stays cool, even when the
Dearborn is on full force—

They don't forget Dearborn.



That's why the Dearborn line has skyrocketed
to the top of the heater field in such a remark-
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heaters will mean money in the bank for you
during the coming year!



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LOS ANGELES, CALIF.

MAKERS OF THE WORLD'S FINEST, SAFEST GAS HEATERS

pass lines and vapor eliminator lines for meters.

"Acme Equipment Corp. already has equipped a number of dealers' trucks and transports from several states. Included are dealers operating in Washington, Ohio, Pennsylvania, Kentucky, South Dakota, and Nebraska," Mr. Bent continued.



D. J. WILL



K. T. NORRIS

D. J. Will has announced the organization of **Compressed Gas Cylinders, Inc.**, Los Angeles, to manufacture liquefied petroleum gas cylinders.

A new plant is now being completed at 2909 East 54th St., Los Angeles, and production is scheduled to start in March. The first product of the new plant will be a 100-lb. capacity propane cylinder conforming in all respects with ICC 4B 240 specifications. It will consist of two heads with semi-elliptical cold drawn halves joined by a single center weld. The spud will feature a pressure fit with an inside lip for extra strength. All welding will be done by automatic machines.

Mr. Will is president of the company and the vice president and treasurer is K. T. Norris, president of the Norris Stamping and Manufacturing Co., Los Angeles. Mr. Norris is one of the foremost fabricators of

steel in this country and is an active leader in the industrial development of the Pacific coast.

Mr. Will is well known through his quarter-century association with the compressed gas industry, as an officer of Stuart Oxygen Co., of San Francisco and Los Angeles. He plans to devote his entire time to Compressed Gas Cylinders, Inc.

Holther Corp., formerly of Pasadena, Calif., announces removal to its new plant, located at 5321 Firestone Blvd., South Gate, Calif. This new site comprises a 2-story building, furnishing spacious quarters for offices and engineering department, and a steel frame, corrugated iron building on concrete slab, with over 7000 sq. ft. area for manufacturing.

Holther Corp. manufactures quality LP-Gas appliances, including the "TU-FLAME" hot plate, the portable LP-Gas stove, and is presently engineering other items for release to the trade in the near future. The products are distributed through wholesalers and dealers serving the LP-Gas trade.

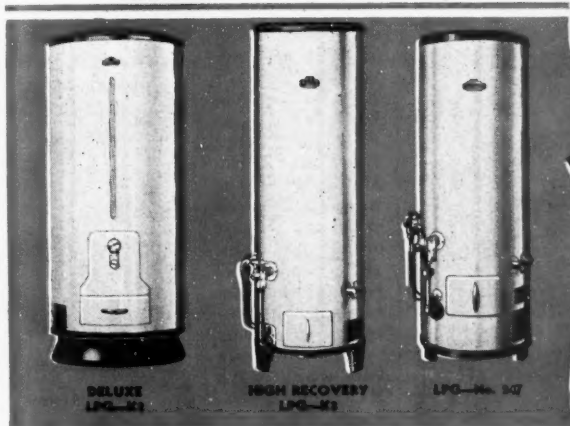
James H. Holther, president, announces the appointment of John Aikins as director of sales for the company. Mr. Aikins was previously associated with National Lead Co. on the Pacific Coast for 21 years.

R. S. "Bob" Agee, widely known appliance sales authority, has recently been appointed merchandising counselor as well as factory representative for the Glenwood Range Co., Taunton, Mass. Mr. Agee will select dealer and utility outlets in the eastern Pennsylvania, southern New Jersey and Wilmington, Del., area.

Mr. Agee's previous business connections include the Washington Gas Light Co. in the nation's capitol, with



AUTOMATIC STORAGE WATER HEATERS



A COMPLETE LINE OF **LP** HEATERS

With Recovery
From 25 Gals. to 53
Gals. Per Hour

AGA
APPROVED

You PROFIT in every way with the C&L-Hoffman Line...

- 1 WIN extra sales with C&L-Hoffman's model-range for every family need.
- 2 INCREASE your customer-popularity with C&L-Hoffman's life-long satisfaction.
- 3 SAVE service expense with C&L-Hoffman's experienced engineering and construction.
- 4 GAIN the benefits of C&L's "qualified jobber" supply service.
- 5 Water heaters are load builders.

Write for detailed specifications on this "hot line" of LPG heaters.

Hoffman's "The Hottest"
SINCE 1903

Other C & L Products

C & L-BLOW TORCHES &
FIRE POTS—C&L-LAMNECK
FURNACE PIPE & FIT-
TINGS—BUCKEYE CORN
CRIBS & GRAIN BINS—
SILVER SHIELD SILOS.

CLAYTON & LAMBERT MFG. CO.
LOUISVILLE 10, KENTUCKY

The magazine Arts & Architecture consulted 600 of the leading architects of the U.S. on their Case Study House program. These experts have "Merit Specified" Hammel Comfortaire in six of the eight CS Houses built or under construction.



The Comfortaire delivers an even, comfortable flow of warmed air in winter...Circulates a steady supply of fresh, filtered air in summer

...Can be installed in basement, closet or convenient recess...Incorporates advanced features of forced air, automatic gas heating. There's a Hammel Heating Unit for every heating need. Write for particulars.

Hammel
RADIATOR ENGINEERING CO.
Owned and Operated by S. S. Martinson and Associates
3348 Motor Ave. Los Angeles 34

which he served as sales promotion manager, and he is widely known in appliance trade circles for launching the national "CP" gas range program while serving as sales promotion manager of the Gas Appliance Manufacturers Association.

The appointment of Carl Schlenk as national service manager has been announced by Cecil M. Dunn, director of sales and advertising of the Estate Heatrola Division, Noma Electric Corp., Hamilton, Ohio. Mr. Schlenk has been associated with the Estate organization since 1923. Since 1937 he has been Estate's chief research engineer.



CARL SCHLENK

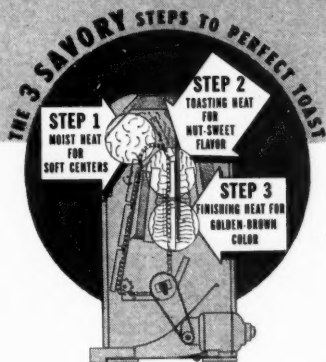
Mr. Schlenk will work with Mr. Dunn in executing Estate's new program for a national service organization with service centers located strategically throughout the country. Estate field representatives will train dealer organizations in the adjustment and service of Estate appliances. Mr. Schlenk's division will be responsible for developing equitable warranties and service policies on Estate products, and will also handle sales of accessories and service items.

S. D. Hackley, vice president and general manager of Kaiser Fleetwings Sales Corp., Oakland, Calif., and Bristol, Pa., has announced the appointment of Alfred D. Howard as general sales manager to supervise sales of the Kaiser dishwasher.

Before joining Kaiser Fleetwings last spring, Mr. Howard for eight

QUANTITY *and* QUALITY

MUST GO TOGETHER



Savory

Stainless Steel Toasters LP Gas



The new Savory Stainless Steel models for LP gas are the finest toasters ever produced for quantity production of quality toast. Made in models suitable for toasting bread, buns, and sandwiches.

Every restaurant, hospital and institution is faced with the problem of QUANTITY production of QUALITY toast—and Savory LP gas toasters are the ONLY completely satisfactory solution.

That's why Savory Toasters are a quick selling item for LP GAS DEALERS. They carry a good merchandise profit, but, more important, they solve the toast problem, demonstrate the high quality production and low cost of operation of LP gas and frequently result in the installation of additional heavy-duty LP gas cooking equipment.

Savory is cooperating with LP gas dealers who are developing the profitable commercial cooking load.

Write for Details

Savory

EQUIPMENT, Inc.

137 Pacific Street, Newark 5, N. J.
Sold by leading dealers everywhere

JOHNSON

More Heat for Your Dollar

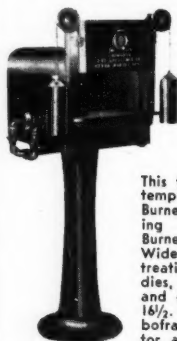
New
20X and 40X
Burners



These JOHNSON Cross-Type Burners are recommended for heating cream-can steamers and large urns of 5 gallons capacity and over. They can be used singly or in series under vats and tanks for melting any low temperature compounds such as waxes, paraffin, etc. Factory adjusted for maximum efficiency with bottle gas. Consumption: 20X—15,000 BTU's per hour. 40X—30,000 BTU's per hour.

Write for details

Quick Acting JOHNSON Heat-Treating Furnaces



No. 130A
Hi-Speed

This furnace comes in two temperature ranges. 4-Burners for steels requiring 1400-2350°F. and 6-Burner for 1800-2400°F. Widely used for heat-treating high speed steels, dies, and tools. Saves time and gas. Firebox 7 1/4 x 13 x 16 1/2. Complete with Carbofrax Hearth, G. E. Motor and Johnson Blower.

Write for complete Catalog describing all JOHNSON furnaces, blowers, burners, torches, valves, and industrial gas burning equipment.

Johnson Gas Appliance Co.

597 E AVENUE N.W.
CEDAR RAPIDS, IOWA

years had been assistant sales promotion manager for Servel, Inc. He has been in the appliance business almost 20 years.



C. E. HEBERT

Clarence E. Hebert has been appointed Pacific Coast factory representative of J. C. Pitman & Sons Sales Corp., Lynn, Mass., according to a recent announcement by Arthur R. Pitman, vice president of the company.

Mr. Hebert is intimately familiar with the commercial equipment cooking field as a result of 14 years he spent with the Lynn Gas & Electric Co. as its industrial and commercial sales engineer. At the present time he is very active with the American Gas Association as a member of the food service equipment committee and the industrial and commercial gas section.

Glenn Reynolds and Lewis E. Bowen, long associated with Southern Gas & Equipment Co., have resigned from that company to re-enter the LP-Gas industry in other capacities.

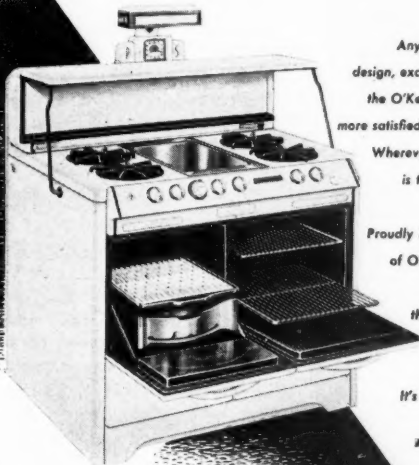
Mr. Bowen, who was vice president and secretary of SG&E, has been in the butane-propane business since 1936 when he was employed by the National Butane Gas Co. at Memphis, Tenn. He now plans a 30-day vacation with relatives in Arkansas before returning to work.

Mr. Reynolds' first connection with LP-Gas began with his position as advertising manager for SG&E im-

THIS SIGN ON YOUR WINDOW



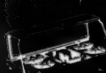
Means more satisfied customers . . . **MORE PROFITS!**



Any way you look at it . . .
 design, exclusive features or performance . . .
 the O'Keefe & Merritt LP-Gas Range means
 more satisfied customers . . . more profits to you!
 Wherever sold, this easy-to-sell range
 is the choice of women
 who take pride in their cooking.
 Proudly backed by over a quarter century
 of O'Keefe & Merritt design and
 manufacturing experience,
 this fine new "LP-Engineered" range
 can play a "lively tune"
 on your cash register.
 It's the range that's easy-to-sell!

**ALL O'KEEFE & MERRITT LP-GAS RANGES
 HAVE 100% OVEN PILOT AND SAFETY**

ONLY O'KEEFE & MERRITT OFFERS THESE EXCLUSIVE FEATURES!



VANISHING SHELF
 Handy up-burner utility shelf that really vanishes when not in use!



GRILLEATOR BROILER
 Rotate, fast, finger-tip control makes broiling easier than frying.



COOL CONTROL PANEL
 Keeps any burner set rocks always cool. They never overheat!

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Complete ONE STOP SERVICE

For all L.P.
GAS EQUIPMENT

CORKEN

**BULK PLANT PUMPS
TRUCK PUMPS
SMITH METERS
O.I.C. VALVES
ENGINEERING SERVICE**

WRITE FOR CATALOG

★ Rego Fittings	★ Flare Fittings
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★ Viking Pumps	★ Boss Couplings
★ Range Connectors	★ Strainers
★ Heater Connectors	★ "U" Joints
★ Oriflows	★ Sight Flow Gauges
★ Power Take-Offs	★ Hand Pumps
★ Flexible Shafts	★ Copper Tubing
★ J & S Carburetors	★ And Many Others

★ We can install bulk plant pumps and piping
★ complete. We have a complete truck pump
★ mounting service.
★

THE ALAN W.
1816 COCKRELL ST.



BOWSER CO.
DALLAS 2, TEXAS



GLENN REYNOLDS



L. E. BOWEN

mediately after the war. Later he took over the management of the bulk storage and tank truck division, and finally was made sales manager and sales promotion manager. He is now associated with the Gas Equipment Co., Dallas.

Fred C. Farmer has been named general sales manager of the Holly Manufacturing Co., Pasadena, Calif., makers of "Stubby" vented floor furnaces and Holly vented wall heaters, according to an announcement made by J. Stanley Johnson, president.

For eight years previous to his new appointment, Mr. Farmer was with Bowser, Incorporated, where he served as manager and as sales manager of the oil meter division.

Automotive Filling Station Established at Abilene, Kan.

Equipped to service automobiles, trucks, tractors, and cylinders, an LP-Gas filling station has been installed on highway No. 40 west of Abilene, Kan., by Lincoln Bennett, Bennett's Gas and Electric Supply.

The station will operate on a 24-hour a day schedule.

BUTANE-PROPANE News

Obeying Present Laws Is Enough, Says Fire Marshal

A safety-conscious fire marshal in Kansas has summarized his attitude toward regulation in a manner that should be of interest to every LP-Gas dealer. Walter McClanahan, whose office is responsible for enforcing safe practices in Kansas, has this to say:

"Those members of the liquefied petroleum gas industry in Kansas who conscientiously are trying to live up to safety requirements deserve the public support. Others, who ignore safety rules and regulations and who try to get by skating near the rim of disaster, deserve little favor.

"The need today is not for more stringent laws, but for the reformation of this poor type of LP-Gas dealer and 'trader' who always tries to get by without full compliance re-

gardless of how many laws are in effect.

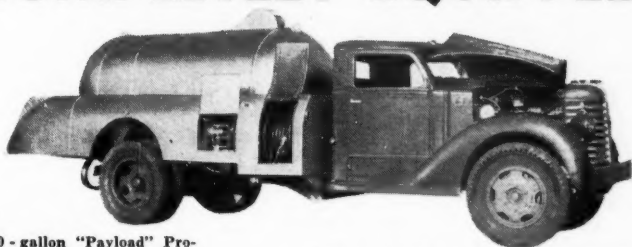
"Dealers who ignore rules and regulations set up for their own safety and that of their customers will have to assume full responsibility for their actions."

Oklahomans Revise Regulations Covering Industry Operations

In compliance with Pamphlet No. 58 issued by the National Board of Fire Underwriters, members of the LP-Gas division of the Oklahoma state fire marshal's office have worked out a revision of regulations governing the handling of LP-Gas. John Knox Smith, field engineer of the LPGA, Chicago, assisted M. G. Young, state fire marshal, in making the changes.

A meeting of the LP-Gas division

COMPLETELY EQUIPPED!



1200 - gallon "Payload" Propane delivery truck sold and equipped by us for Central Propane Gas Co., Yakima, Washington.



NOW we furnish a delivery truck tank completely equipped. Single or double tanks for Propane or Butane. Built under U68 or U69. For the best design and efficiency write, wire or phone us today.

ACME EQUIPMENT CORP.
313 SO. PEARL ST. — DALLAS 1, TEXAS
Phone R-4089



THE ONLY gas range connector using malleable iron fittings . . . a heavy flared tube fitting combined with special alloy aluminum tubing with .049" wall thickness. **UNDERWRITERS APPROVED** for all gases.

EASY DOES IT. The long 10° tapered cone of a Superseal fitting assures permanently gas-tight seal. There's no need to be "brutal" when tightening the nut, but you need not fear shearing the tubing or damaging the fitting. Tubing bends sharply close to the fitting — for flush-to-wall installations.

COMPETITIVELY PRICED. Available in any combination of elbows and straight fittings. Write for complete description. Over 400 U. S. Distributors . . . one near you.



reviewed the revisions in December, and at a later date they will be explained to Oklahoma dealers. Fire Marshal Young has stated that he hopes every dealer handling LP-Gas and appliances will be on hand to hear the orientation and join the discussion.

Dewey Wood, Ardmore, chairman, Logan Hyder, Chattanooga, and Ralph Lillard, Shawnee, are the members of the Oklahoma LP-Gas division of the state fire marshal's office.

Dealer Finds Success In Own Backyard

By ZOE JOHNSON

THE story of Wixson Bros. Equipment Co. of Fisher, Poinsett county, is a new twist to the old fable of finding diamonds in your own back yard.

The little inland town of Fisher with about 300 population is far removed from either bus line or the railroad, but is nestled in the rich heart of the rice country. Here, Kenneth Wixson, founder of the company, found his opportunity in "being in the middle of things" and having the vision and initiative to realize his advantage.

Mr. Wixson seems to have been born with an extra supply of energy and business sagacity—a sagacity that can foresee the need and demand for new services just around the bend of the road. After planning soundly he moves forward

RAPID MOISTURE REMOVERS

Eliminate

MOISTURE FREEZE-UPS

**Assures constant
gas service!**



- Safe to use
- Easy to install
- Equipped with standard LH-P. O. L. fittings
- Available in a variety of sizes
- Refillable — can be used indefinitely

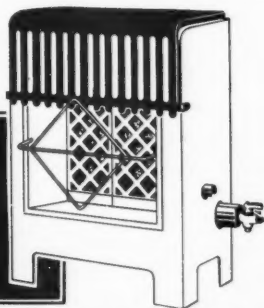
Your Wholesaler Can Supply You

***Fine* PRODUCTS CO.**

185 NORTH WABASH AVENUE • CHICAGO 1, ILLINOIS

BRILLIANT FIRE *Utility* HEATER

AN OUTSTANDING HEATMAKER. BLACK AND WHITE ENAMEL FINISH. FITTED WITH TWO (2 IN. 1) HEAVY DUTY CIRCULATOR TYPE RADIANTS OF HEAT-REFLECTING REFRACTORY. EQUIPPED "VAC-LIGHTER" . . . MERELY OPEN VALVE, HOLD MATCH TO PORT AND IT LIGHTS INSTANTLY. NO FUMBLING.



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THE OHIO FOUNDRY & MANUFACTURING CO.

Engineers • Manufacturers • Designers

STEUENVILLE • OHIO • U.S.A.

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Serve Your Needs**

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**BULK STORAGE
TANK TRUCKS
TRANSPORTS
SYSTEMS (all sizes)
I.C.C. CYLINDERS
APPLIANCES
METERS
PUMPS
FITTINGS
HOSE**

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*Anhydrous Ammonia Fittings,
Tanks & Equipment*

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**Complete Engineering
Service**

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Wire—Phone—Write

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The Edwards Co.

124 W. First Street

Phone 3-6694

Tulsa 6, Oklahoma

on carefully laid plans, shunning risky get-rich-quick gambles, and when the demand arrives—being the first man on the ground, he gets the business. That's the way he became a big butane man in Poinsett county.

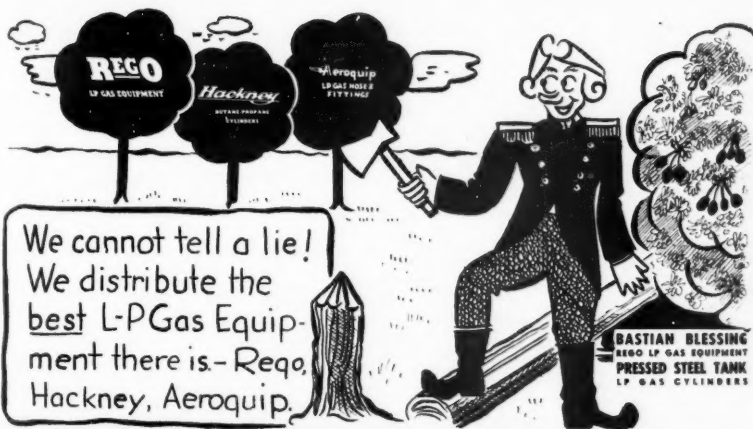
First Founded Hardware Store

Mr. Wixson's first business venture was the founding of Fisher Garage and Hardware Co., which drew its patronage from the surrounding farming area before the agricultural revolution from cotton growing to rice cultivation ushered in the unlimited demand for butane installations and equipment.

His first expansion to meet the rice revolution was the installation of steam pumps on new rice farms. And he installed them all over northeast Arkansas. He then secured the agency for the Peerless turbine pump and has installed over 1000 of them. Installation of these pumps remains a specialty of the Wixson Bros. Equipment Co.

In 1940, Mr. Wixson added butane appliances to his hardware store and installed a storage tank. By 1942 the business had grown until a partnership with his brother, Roy Wixson, was formed and the new firm took the present name of Wixson Bros. Equipment Co.

In 1944 a subsidiary of the company, The Butane Gas Co., of Jonesboro, Ark. (Craighead county), was opened and in February, 1947, another subsidiary was opened at Harrisburg, Poinsett county. Harold Vise is manager of the Jonesboro company and J. V. Bruckner is manager of the Har-



GAS EQUIPMENT COMPANY, Inc.

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THERE'S A TANK for EVERY OCCASION

Whether it's a STORAGE TANK, a TRANSPORT TANK, a TRUCK TANK, or any other type of LPG Equipment, DELTA has or can build exactly the right tank for your needs—We invite your inquiry.

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A DEPENDABLE SOURCE
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A CAPABLE SUPPLIER

TWENTY YEARS' EXPERIENCE

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IN LP GAS ALSO

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MEANS
GOOD SERVICE

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CITIES SERVICE OIL CO. (Del.)

•

BARTLESVILLE, OKLA.
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risburg company. He was formerly a salesman for the Wixsons.

In 1947 the company installed between 150 and 200 butane systems and dug 75 wells. Salesmen work out of Fisher all the time but combine and tractor prospects are Mr. Wixson's private specialty. The demand is still far ahead of supply.

Wixson Bros. have strong demands for butane serviced equipment that are yet impossible to meet because the manufacturers cannot supply them: the new, small butane farm rice dryer.

Big Demand for Dryers

There seems to be an almost unlimited demand at present for these small farm dryers. They have been able to install only 5 up to now but have orders for many more. These small dryers promise to be the biggest money making expansion of butane in the rice fields. They will enable the farmer to do his own drying and some for neighboring farms. Storage bins will be erected on the farm, thus relieving the storage bottleneck of commercial dryers, save the farmer storage rent and enable him to hold his rice for the most favorable market.

They are selling three sizes of these small dryers. The smallest has a capacity of 100 bushels per hour and sells for \$3000; another, 200 bushels per hour and sells for \$5200; the largest has a capacity of 250 bushels per hour, the price yet undetermined.

Four trucks and 10 to 12 installation men are busy all the time installing new home and commercial

Always "Ready" for Instant Use

PIPE-TITE-Stik

PIPE JOINT COMPOUND

in Stick Form

GOING
OVER
BIG!



Patented Copy, 1947

"Reddy"

POSITIVE
SEAL

—for BUTANE,
PROPANE, Gas

Oil, Gasoline, Water, Air,
Steam, Acid, Freon, Methyl
Chloride, Brine, etc.

WON'T DRY OUT

HANDY AS A PENCIL

Contains No Lead. Contains
No Injurious Ingredients.

NO MESS

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NO WASTE



Order from your Dealer or write us
for FREE SAMPLE

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STORAGE VESSELS

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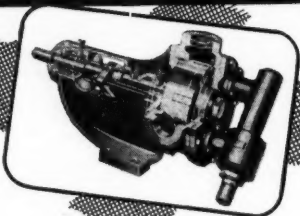
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Look for the registered Viking trademark or name on every genuine Viking pump. These are your guarantee of Viking superiority.

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VIKING
PUMP COMPANY
Cedar Falls, Iowa

butane systems and supplying gas to customers.

Another clue to the Wixson success and expansion, according to Mr. Bruckner, is Mr. Wixson's policy to live and let live. Handling, as he does, a complete line of farm machinery, with his rice wells and butane business that puts him in contact with all farming and machinery interests in the section. Mr. Wixson refuses to encroach on the business of the cotton gin salesmen in the territory. He feels that he has enough business without trying to hog the cotton gin business from other men who have a right to a fair share of business as well as himself.

New Regulations Covering LP-Gas

Federal, state, and municipal regulations covering the LP-Gas field continue to be passed by regulatory and legislative bodies. The most recent as reported by the LPGA legislative counsel, Arthur C. Kreutzer, are as follows:

Demurrage on Tank Cars (ICC):

Service order No. 798 as issued Dec. 2, 1947, effective Dec. 20, 1947, provides for demurrage charges on privately owned LP-Gas tank cars when on the owner's own tracks. This order expires March 1, 1948.

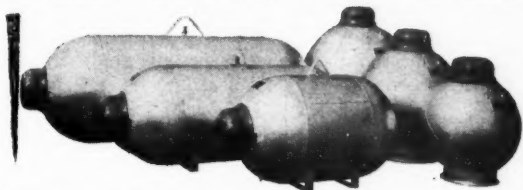
State Legislation (Massachusetts):

Senate bill No. 298 extending the law providing for the supervision of plumbing and gas fitting by one provision would permit the licensing as a gas fitter of any LP-Gas installation employee with three years' experience. The bill makes no further mention of

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Spherical or Cylindrical
End Fitted or Top Fitted
Criterion or Rotary Gauged

SUPERIOR GIVES YOU A CHOICE

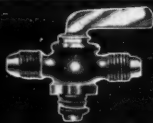


Superior Tank & Construction Co.

6155 So. Eastern Ave.

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HEADQUARTERS FOR

BRASS FITTINGS • SHUT-OFF COCKS
SERVICE TOOLS • SUPPLIES
COPPER TUBING

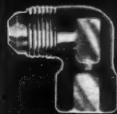
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KANSAS CITY BRASS COMPANY

1735 Main Street • Kansas City 8, Missouri

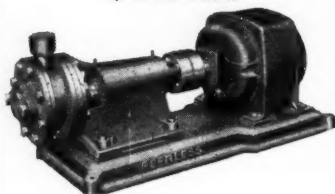
COMPLETE STOCKS OF ALL TYPES AND SIZES

Catalog and prices sent on request



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Butane-Propane
SERVICE
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TURBINE (VANE)
PUMPS

For High Heads and Capacities
up to 150 G.P.M.



Type XT

For efficient, low cost liquefied petroleum gas services including 1 p-g bottling, tank storage, truck, tankcar transfer, etc.

Most advanced in design and construction for maximum service and dependability.

Write for Details



Peerless Pump Div.
Food Machinery Corporation
Canton 6, Ohio—Quincy, Illinois
Los Angeles 31, Calif.

LP-Gas. It does provide penalties for engaging in the work of "gas fitting" without such a license.

State Regulatory (Nebraska):

The State Fire Marshal has issued new LP-Gas regulations. These follow NBFU pamphlet No. 58 in entirety.

State Regulatory (Minnesota):

The State Fire Marshal has in process consideration of LP-Gas regulations. It was expected that hearings would be held sometime in January. Present proposals include use of Pamphlet No. 58 insofar as possible with further requirements of examination and approval of installations in excess of 1200 gals., and of approval in the form of a permit of companies making installations.

State Regulatory (Texas):

The Railroad Commission has issued a revision of the State LP-Gas regulations, effective Nov. 15, 1947. A digest of the new regulations is now being issued for the legislative section of the LPGA manual.

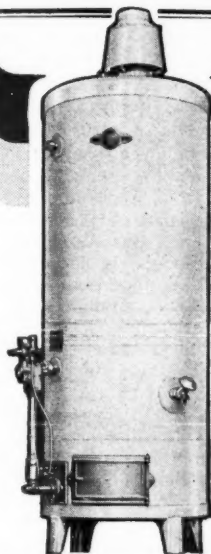
Municipal Ordinances (Chicago):

The Chicago city council has under consideration a new building code wherein a section is to be devoted to LP-Gas regulations. Present indications are that this section will follow Pamphlet No. 58.

**Wixson Brothers Form
New Arkansas Company**

The Jonesboro Butane Gas Co., of Jonesboro, Ark., has filed articles of incorporation with the secretary of state in Little Rock.

Paid-in capital is \$45,000, and the incorporators are K. L. and Roy Wixson of Fisher, and H. F. Vise, of Nettleton, Ark.



Outstanding **Quality...Styling...Value**

Greater grows the demand for SECURITY Automatic Hot Water Heaters. More and more buyers seek the smart appearance, dependable performance, superior workmanship for which SECURITY is famed. Thousands of users are amazed at the efficiency, economy and long life of these gleaming Automatic Water Heaters. Operate on all fuel gasses. Now is the time to look to SECURITY . . . for leadership and for sales!

SECURITY

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The "LONG-LIFE" LINE

SECURITY MANUFACTURING CO.
KANSAS CITY 3, MO.

Butane & Propane

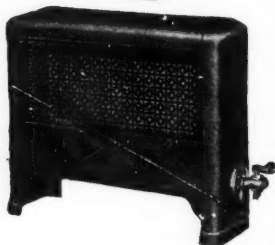
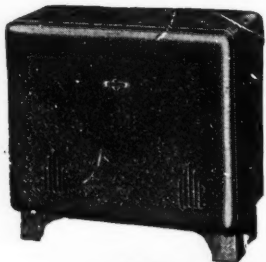
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LOUISVILLE, KENTUCKY
Since 1884

Price Schedule For Testing Tanks

A PRICE schedule for retesting and reinspecting LP-Gas tanks has been published by R. H. Mahnke, executive vice president of the Kansas Liquefied Petroleum Gas Association.

The price schedule is issued by Bernard E. Patton, licensed inspector of the B. & G. Manufacturing Co., Wichita, Kan.

In every instance, states Mr. Patton, "if these tanks do not come up to the standards which are set, and are found unsafe to operate, the charges named will still be made, and a report to that effect will be made to the state fire marshal's office."

Truck Transport Tanks up to 1500 water gallon capacity, hammer tested, hydrostatically tested and reinspected, calibrated and stamped, inspection report furnished, and approved by state fire marshal. Charges for this service will be \$35, plus a steam out charge of \$10 in case it is necessary to drill heads and shells of tanks in order to establish thicknesses, and soundness of welding.

Semi-Trailer Transport Tanks of any capacity, hammer tested, hydrostatically tested and reinspected, calibrated and stamped, inspection report furnished, and approved by state fire marshal. Charges for this service will be \$45, plus a steam out charge of \$20 in case it is necessary to drill heads and shells of tanks in order to establish thickness and soundness of welding.

In order to make a satisfactory inspection of transport tanks, it is



"Buckeye" G-5

L. P. GAS HOT PLATE

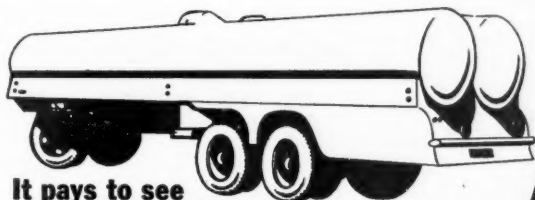
With Removable Ribbon Type Burner

Black lustre enamel finished cast iron; 6" x 19 5/8" x 11". Brass L. P. Valve adjustable for natural or mfg. gas. Wt. 15 lbs. Load-tested over 1000 lbs. Shipping weight (three to carton) 50 lbs. Advertising available.

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Immediate Delivery
of 100-lb. 4B240 I.C.C.
CYLINDERS
direct from stock!

Products engineered to
your needs... plus helpful
counsel on any problem
...based on long,
wide experience

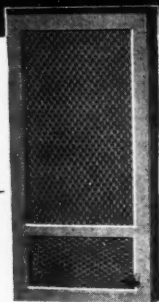
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Industrial Systems
Accessory Equipment
and Complete
BULK PLANTS

WILLIAMS Vented WALL WARMOLATOR

**SIMPLE TO
INSTALL**

**NO PIT
REQUIRED**

**AVAILABLE
IN DUAL OR
SINGLE UNIT**



designed for 4" STUD WALLS

Ideal for apartments and small homes, Williams Wall Warmolators can be quickly installed in a standard 4-inch stud wall... require no pit. They are also suited to cement block or slab construction, and second-story installations. Warmolators are vented... all products of combustion are carried off through 4-inch oval flue. Cast iron burners correctly designed for natural, manufactured, or liquified petroleum gas, give years of trouble-free service. These units are AGA approved and eligible for FHA loans. Any type of thermostatic control may be installed with the Warmolator.

Send for Literature.

WILLIAMS RADIATOR COMPANY

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necessary that these tanks be brought to our plant.

Domestic Tanks up to and including 300 gallon capacity, hammer tested, hydrostatically tested and reinspected, calibrated and stamped, inspection report furnished, and approved by state fire marshal. Charges for this service will be \$10, plus a steam out charge of \$5 in case it is necessary to drill heads and shells of tanks in order to establish thickness, and soundness of welding.

Domestic Tanks over 300 gallon to and including 1000 gallon capacity, hammer tested, hydrostatically tested and reinspected, calibrated and stamped, inspection report furnished, and approved by state fire marshal. Charges for this service will be \$15, plus a steam out charge of \$7.50 in case it is necessary to drill heads and shells of tanks in order to establish thicknesses and soundness of welding.

Domestic Tanks over 500 gallon to and including 1000 gallon capacity, hammer tested, hydrostatically tested and reinspected, calibrated and stamped, inspection report furnished, and approved by state fire marshal. Charges for this service will be \$17.50, plus a steam out charge of \$10 in case it is necessary to drill heads and shells of tanks in order to establish thicknesses and soundness of welding.

The above listed charges for the inspection of **Domestic Tanks** is based upon these tanks being brought to our plant for inspection.

For Domestic Tanks inspected at the dealers or owners premises with the owner or dealer furnishing the labor and preparing the tanks for inspection, with a minimum of three tanks to be inspected at any one time, the charges will be \$5 each for tanks

REGO
The One
Truly Complete Line

See Pages 96 and 97



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**SAVE FAT . . . GAS
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***Deep-Fat Frying
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- ★ Customers can serve a wider variety of fried foods.
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- ★ Actual saving in fat alone more than pays total cost of gas required to operate them.

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SALES CORP.**

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up to and including 500 gallon capacity; over 500 gallon and up to and including 1000 gallon tanks the charge will be \$7.50.

A minimum mileage charge of 10¢ a mile will be added to the above to cover time and travel expenses. In case steam out is necessary, the owner or dealer will have to make arrangements to have this done.

How to Improve Sales Technique

By T. W. COOVER

College of Business Administration,
University of Tulsa

Customer Relations

A SUCCESSFUL sale has been defined as "selling goods that won't come back, to customers who will."

Why customers come back:

1. For superior merchandise.
2. For special inducements.
 - a. Faster deliveries.
 - b. Deferred payments.
 - c. Seasonal discounts.
 - d. Free services.
3. For honest friendship.

Principles of good customer relations:

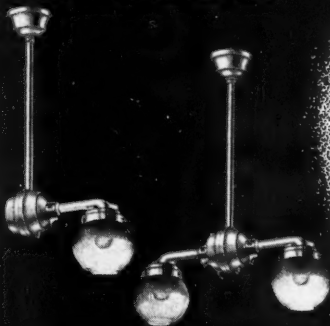
1. Get the buyer's viewpoint.
2. Be sincere in all dealings.

Many papers of unusual import to the LP-Gas industry were presented at the 1947 University of Tulsa Short Course.

Sufficient space is not available to print these in full, but in this and succeeding issues will appear abstracts of many of them.—Editor.

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Dealers everywhere are making fine profits with HUMPHREY L-P Gas lamps. Here is dependable lighting service plus style and durability. Write for complete description and prices.



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What they say about mousetraps goes for L-P Gas Equipment, too. That's why we stock Rego, Hackney and Aeroquip quality equipment.

BASTIAN BLESSING - PRESSED STEEL TANK
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TRI-SAVER COFFEE URNS



Nationally advertised. Permanent stainless steel filter makes perfect coffee without urn bags or filter paper. All stainless steel, burnout-proof construction.

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Stainless steel top and covers. Open, semi-enclosed, fully-enclosed under-structures. Choice of top arrangements.



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4. Pay attention to detail.
5. Be vigilant in keeping customers' records.

Devices and techniques aimed at customer cultivation and development under competitive pressure:

1. Personal letters expressing appreciation (a) for continued patronage, (b) for customers who pay bills promptly; (2) A file card to recover one-time-buyers; (3) Salesmen who establish favorable personal contact with customers; (4) Complaint departments which even make a collection letter a good sales letter; (6) Advertising which gets the elementary facts to prospects before the salesman calls; (7) Attractive sales letters; (8) Use of public service announcements among advertising space; (9) House organ publications distributed free to customers; (10) Open houses to announce new additions of a progressive nature, attended by cordial top executives of the firm.

Bureau of Mines Issues Report On Isobutane Fires

The name and description of a recently issued Government publication follows:

Extinction of Isobutane Flames by Carbon Dioxide and Nitrogen, by G. W. Jones and G. S. Scott, U. S. Dept. of the Interior, Bureau of Mines, Washington, D. C., Report of Investigations No. 4095. As a part of the accident-prevention program of the Bureau of Mines, a study has been made of the general explosion hazards of isobutane and its limits of inflammability, minimum ignition temperatures, and the amounts of nitrogen and carbon dioxide required to render isobutane-air mixture noninflammable are given in this report.